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SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CHARLES F. MARVIN, Chief.

No. 1.

WASHINGTON, D. C., JANUARY 2, 1923.

WINTER 1922-23.

SNOWFALL FOR THE SEASON TO DATE.

During October, 1922, no important snowfalls occurred, save near the close of the month, when considerable snow fell over the higher portions of Utah and northern Arizona and over districts to northeastward as far as the Black Hills region and parts of eastern Montana.

The snowfall of November was generally not heavy, especially to eastward of the 100th meridian. However, in parts of the Rocky Mountain States, the Dakotas and western Nebraska there were some heavy falls early in the month, particularly on the 4th and 5th when the fall over eastern Wyoming, western South Dakota and adjacent districts was unusually heavy. In the Black Hills region the depths ranged from 3 to 4 feet on the level, and much loss of live stock resulted. At Lander, in central Wyoming, from the snowfall late in October, the ground remained constantly covered till well into December, owing largely to the decidedly low temperatures that prevailed, and to the moderate additional falls that occurred. This snow cover necessitated an unusual amount of feeding for the time of the year. In the central Sierra of California some heavy snowfalls occurred from the 6th to 10th.

Over the upper Mississippi Valley and the districts to eastward there was considerably less snowfall than the November average, except in a few small areas. During the cold weather of the closing week a little snow and sleet, never more than 2 inches, fell over the south-central portions of Alabama and Georgia, reaching some points where no snow had previously fallen for a long period.

During the first ten days of December considerable snow fell in the northern portions of the country from the Cascades eastward to northern Minnesota, especially in Montana and in high districts farther west, and some occurred in western Washington. Owing to low temperatures the snow remained practically unchanged till about the 17th, when mild weather set in, causing rapid melting. At the same time, in most central and eastern districts there was comparatively little snow till near the middle of the month, coming from northern Michigan eastward to Maine, and the amounts here were less than usual in early December. A light fall occurred in most of Maryland and southeastern Pennsylvania and adjacent districts about the 9th, but quickly melted.

From the 13th to 17th considerable snow occurred from the middle Plateau eastward to the western portion of the middle Plains and light to moderate amounts from Iowa eastward.

The period from the 18th to the 27th was comparatively free from important snowstorms, and with moderate temperatures for the season the snow cover shrank or disappeared as far north as the southern portions of Minnesota and Michigan. On the 28th and 29th snow occurred from the Great Lakes eastward, with heavy falls in New York and New England.

At 8:00 p. m. of the 1st, the snow-covered area, as shown by the chart on the reverse side, was confined mainly to the northern tier of States and to the elevated portions of the mountain districts of the West. In the western mountains the amounts depend mostly on the elevations of the various sections, ranging up to 96 inches in the high Sierra.

ICE IN RIVERS AND HARBORS.

At 8:00 p. m., January 1st, the Missouri River was closed from Sioux City, Iowa, and the Mississippi River from Dubuque, northward. The rivers of the Ohio drainage area were mainly free of ice, as also those of the Atlantic coast, save in New England where the upper courses of most rivers were generally ice-bound.

P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., JANUARY 1, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>California.</i>	<i>Inches</i>	<i>Inches</i>	<i>New Hampshire.</i>	<i>Inches</i>	<i>Inches</i>
Emigrant Gap.....	12	.....	Concord.....	11	6.0
Huntington Lake ...	48	.....	West Stewartstown ..	12	.....
Sierraville.....	8	.....	<i>New Jersey.</i>		
Summit.....	96	.....	Elizabeth.....	4	.....
<i>Colorado.</i>			Lakewood.....	2	.....
Cumbres.....	43	.....	Newton.....	4	.....
Dillon.....	32	.....	Trenton.....	0	*
Grand Junction.....	T.	.....	<i>New Mexico.</i>		
Leadville.....	13	.....	Cloudcroft.....	T.	.....
Rico.....	37	.....	Tres Piedras.....	1	.....
<i>Connecticut.</i>			<i>New York.</i>		
Hartford.....	3	7.0	Albany.....	T.	†
New Haven.....	T.	0.0	Beaver River.....	6	.....
<i>Idaho.</i>			Buffalo.....	1	3.0
Hailey.....	24	.....	Herkimer.....	6	.....
Idaho City.....	14	.....	Ithaca.....	T.	.....
Ketchum.....	36	.....	Lowville.....	10	.....
Mackay.....	8	.....	Malone.....	8	.....
North Star Mine.....	31	.....	Oswego.....	4	11.0
Porthill.....	2	.....	Poughkeepsie.....	6	.....
Soldier Creek.....	32	.....	Rochester.....	9	‡
<i>Indiana.</i>			Warwick.....	6	.....
Terre Haute.....	0	†	Watertown.....	3	.....
<i>Iowa.</i>			<i>North Dakota.</i>		
Davenport.....	T.	8.0	Bismarck.....	8	15.0
Des Moines.....	T.	*	Devils Lake.....	6	.....
Dubuque.....	T.	8.0	Williston.....	2	12.0
Sioux City.....	1	10.0	<i>Ohio.</i>		
<i>Kansas.</i>			Sandusky.....	0	2.0
Dodge City.....	T.	.....	Toledo.....	T.	*
Dresden.....	T.	.....	<i>Oregon.</i>		
<i>Maine.</i>			Baker.....	2	.....
Eastport.....	10	0.0	<i>Pennsylvania.</i>		
Greenville.....	15	15.0	Erie.....	T.	1.0
Portland.....	13	0.0	Freeland.....	T.	.....
<i>Massachusetts.</i>			Huntingdon.....	T.	.....
Boston.....	T.	0.0	Mifflintown.....	T.	.....
Holyoke.....	8	.....	<i>South Dakota.</i>		
<i>Michigan.</i>			Huron.....	T.	13.0
Alpena.....	T.	*	Pierre.....	T.	15.5
Battle Creek.....	T.	.....	Rapid City.....	T.	.....
Escanaba.....	1	12.0	Yankton.....	0	8.0
Grand Rapids.....	T.	.....	<i>Utah.</i>		
Houghton.....	14	7.0	Grantsville.....	1	.....
Mackinaw.....	3	.....	Manti.....	3	.....
Mancelona.....	5	.....	Modena.....	T.	.....
Marquette.....	4	*	Salt Lake City.....	3	.....
Port Huron.....	T.	*	<i>Vermont.</i>		
Saginaw.....	T.	7.5	Bellows Falls.....	16	.....
Sault Ste. Marie.....	8	4.0	Northfield.....	12	.....
<i>Minnesota.</i>			<i>Washington.</i>		
Duluth.....	6	8.0	Cascade Tunnel.....	58	.....
Leech Lake Dam.....	10	.....	Laurier.....	4	.....
Roseau.....	15	.....	Spokane.....	T.	.....
St. Paul.....	0	*†	Stampede.....	25	.....
<i>Missouri.</i>			<i>Wisconsin.</i>		
St. Joseph.....	0	†	Broadhead.....	T.	.....
<i>Montana.</i>			Green Bay.....	T.	6.0
Hayre.....	T.	.....	La Crosse.....	0	7.0
Kalispell.....	2	.....	Madison.....	T.	.....
Miles City.....	3	.....	Medford.....	2	.....
<i>Nebraska.</i>			Park Falls.....	6	.....
North Platte.....	T.	.....	<i>Wyoming.</i>		
Omaha.....	1	*	Buffalo.....	1	.....
<i>Nevada.</i>			Evanston.....	8	.....
Arthur.....	7	.....	Foxpark.....	85	.....
Austin.....	6	.....	Newcastle.....	T.	.....
Hylton.....	6	.....	Sheridan.....	2	.....
McGill.....	5	.....	South Pass City.....	8	.....
North Fork.....	9	.....	Yellowstone Park ..	14	.....

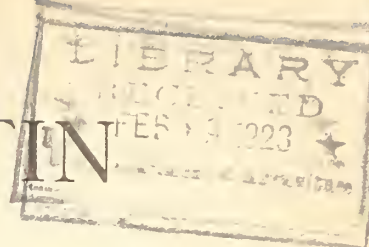
* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable. T. indicates trace.

Depth of Snow on Ground, 8 p. m., January 1, 1923.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.



No. 2.

WASHINGTON, D. C., JANUARY 9, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

Weather changes during the week just closed were frequent but, on the whole, moderate. Temperatures below zero occurred locally along the northern border on several dates during the week, the lowest in the United States, -26° , being reported from Northfield, Vt., on the 7th. At White River, Ont., to northward of Lake Superior, a temperature of -44° was reported on the 6th.

Temperature was moderately low over the Northeast and far Southwest during portions of the week, but elsewhere the averages were usually well above the normal, particularly in the Middle Plains and the northern Rocky Mountain region.

More or less precipitation occurred over considerable areas in the central, northern, and southeastern portions of the country. Precipitation was almost continuous, and at times heavy, in the far Northwest, and severe floods occurred in many of the smaller streams of that region. Rain or snow was moderately heavy over the Northeastern States at the beginning and near the middle and end of the week, and local rains, heavy in a few instances, occurred in the Gulf States on the 3d. In other districts where precipitation occurred it was mostly light.

DEPTH OF SNOW.

Compared with the amounts reported at the same time last week the depth of snow has increased materially over northern districts from the Great Lakes eastward, particularly so in New York and southern and central New England, where the depths now reported are from 6 to 20 inches greater. The total depth over the greater part of New England now ranges from 10 to 20 inches, or more, reaching a maximum of 34 inches at Portland, Me., a most unusual depth so near the coast.

In the mountains and eastern portions of New York the depths are only slightly less than in New England. Over the upper Lakes, however, the depth is mainly less than usually accumulates by this period of the winter.

In the western mountains there is now mainly less snow than was reported last week, the decreases being particularly large in the mountains of Oregon and Washington, and to somewhat less extent in the mountains of California.

The snow-covered area is now slightly greater than a week ago in the lower Lakes region and Middle Atlantic States, but there has been some decrease in the middle Plains where bare ground now appears, which had a slight cover last week. In the far West the snow-covered area remains about as reported a week ago.

ICE IN RIVERS AND HARBORS.

Continued moderately cold weather over the more northern districts caused the formation of additional ice, usually to a small extent only, over streams and lakes of those districts, the greatest increases occurring in the Lake Superior region. The upper Mississippi and upper Missouri Rivers are mostly ice-bound, as well as the harbors of the Great Lakes. In New England the ice is increasing slowly on the main streams, and some ice is being harvested from ponds. In New York the main rivers have but little ice, but some is being harvested from ponds.

P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., JANUARY 8, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>California.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>New Jersey.</i>	<i>Inches.</i>	<i>Inches.</i>
Huntington Lake ...	4	.....	Elizabeth	4	.....
Portola	3	.....	Newton	8	.....
Sierraville	5	.....	Trenton	2	0.0
Summit	94	.....	<i>New Mexico.</i>		
<i>Colorado.</i>			Chama	16	.....
Cumbres	32	.....	Elizabethtown	2	.....
Leadville	19	.....	Tres Piedras	1	.....
Rico	33	.....	<i>New York.</i>		
<i>Connecticut.</i>			Albany	14	3.0
Hartford	16	9.0	Alfred	7	.....
New Haven	9	0.0	Binghamton	6	.....
<i>Idaho.</i>			Buffalo	4	0.0
Hailey	20	.....	Canton	8	.....
Ketchum	30	.....	Ithaca	7	.....
Soldier Creek	30	.....	New York	5	0.0
Spencer	21	.....	Oswego	10	11.5
<i>Illinois.</i>			Poughkeepsie	15	.....
Chicago	1	.....	Rochester	16	5.0
Peoria	3	0.0	Rome	12	.....
Pontiac	5	.....	Syracuse	7	.....
Walnut	2	.....	Warwick	10	.....
<i>Indiana.</i>			Watertown	6	.....
Fort Wayne	8	.....	<i>North Dakota.</i>		
Royal Center	6	.....	Devils Lake	6	.....
<i>Iowa.</i>			Williston	3	12.0
Charles City	2	.....	<i>Ohio.</i>		
Davenport	2	7.0	Cleveland	2	†
Des Moines	1	7.0	Marion	1	.....
Dubuque	1	9.0	Sandusky	4	3.0
Forest City	2	.....	Tiffin	7	.....
Keokuk	3	1.0	Toledo	4	*
Sioux City	2	11.0	<i>Pennsylvania.</i>		
<i>Maine.</i>			Allentown	3	.....
Cornish	21	.....	Emporium	7	.....
Eastport	14	0.0	Erie	5	6.0
Gardiner	22	8.0	Gettysburg	2	.....
Greenville	19	18.0	Harrisburg	2	†
Portland	34	0.0	Huntingdon	6	.....
Van Buren	6	.....	Mifflintown	6	.....
<i>Massachusetts.</i>			Reading	3	.....
Boston	9	0.0	Scranton	3	.....
Holyoke	23	.....	Towanda	4	.....
Williamstown	17	.....	<i>Rhode Island.</i>		
<i>Michigan.</i>			Kingston	9	.....
Alpena	4	3.0	Providence	4	0.0
Cadillac	6	.....	<i>South Dakota.</i>		
Detroit	4	8.0	Pierre	T.	14.0
Grand Haven	3	.....	Yankton	T.	12.0
Grand Rapids	2	.....	<i>Utah.</i>		
Houghton	13	12.0	Logan	3	.....
Mackinaw	5	.....	Watson	T.	.....
Marquette	9	1.0	<i>Vermont.</i>		
Port Huron	4	4.0	Brattleboro	21	8.0
Saginaw	2	9.0	Burlington	7	*
Sault Ste. Marie	8	10.0	Northfield	23	.....
<i>Minnesota.</i>			<i>Virginia.</i>		
Duluth	9	16.0	Staunton	1	.....
Minneapolis	2	.....	Woodstock	2	.....
Moorhead	5	.....	<i>Wisconsin.</i>		
St. Paul	2	*	Fond du Lac	7	.....
Worthington	2	.....	Green Bay	7	6.0
<i>Nevada.</i>			La Crosse	2	9.0
Arthur	12	.....	Madison	2	.....
Austin	8	.....	Park Falls	9	.....
Hylton	11	.....	Wausau	4	8.0
<i>New Hampshire.</i>			<i>Wyoming.</i>		
Concord	23	8.0	Alta	27	.....
Durham	8	.....	Evanston	9	.....
Pittsburg	16	.....	South Pass City	8	.....
			Yellowstone Park	14	.....

*Shore ice. †Floating ice. ‡Ice gorged. §Measurement impracticable.
T. indicates trace.

Depth of Snow on Ground, 8 p. m., January 8, 1923.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 3.

WASHINGTON, D. C., JANUARY 16, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

As has been the case for several weeks past, weather changes were again rapid, particularly along the northern border, where cyclonic storms moved eastward in rapid succession.

Temperatures were usually moderate for the midwinter season, and the daily changes not excessive. The lowest temperature reported in the United States, -10° , occurred in New England on the 12th, while in Canada the lowest, -32° , occurred in the Province of Quebec.

Precipitation was confined mainly to the northern districts, except at the end of the week, when mostly light amounts occurred very generally from the Mississippi River eastward and over the west Gulf States. Precipitation was comparatively heavy at the beginning of the week from the Great Lakes eastward, some heavy snows occurring in the northeastern districts. At the same time heavy rains occurred at the lower elevations in the far Northwest. Precipitation during the remainder of the week, until near the end, was mostly snow and confined to the more northern districts. During Sunday a storm moved into the Great Lakes region attended by snow over the districts north of the center, and by rain to the south. It moved to the North Atlantic States during the following day, attended by precipitation over nearly all districts from the Mississippi River eastward, snow continuing over the Northeastern States.

DEPTH OF SNOW.

A marked increase in the depth of the snow cover occurred over the Northeastern States during the week, and that portion of the country is now heavily covered, the depth ranging from 10 to 20 inches in the mountains of Pennsylvania, to more than 4 feet at points on the coast of Maine. At Portland, Me., a depth of 52 inches is now reported, an increase of nearly 2 feet during the week.

There is now a good covering over the upper Lake region, the increases during the week ranging from 2 to 9 inches.

Over a narrow area from the middle Atlantic coast westward to Iowa, there was a general reduction in the depth of the snow cover, and in the western mountain regions there is nearly everywhere less snow than was reported a week ago, except in the far Northwest where there was a considerable addition.

The snow-covered area remains about as reported a week ago, save in the Great Plains where it is slightly less.

ICE IN RIVERS AND HARBORS.

Due to the absence of severe cold during the greater part of the week only small increases are reported in the ice thickness on the rivers and lakes of the Northern States, and some decreases are noted, particularly in the Lake Superior region, and locally on the Missouri and Mississippi Rivers.

Ice harvest is now progressing satisfactorily over the more northern districts, except in portions of New England, where heavy snow is retarding operations. Practically no ice has yet formed on the main streams of the Central States.

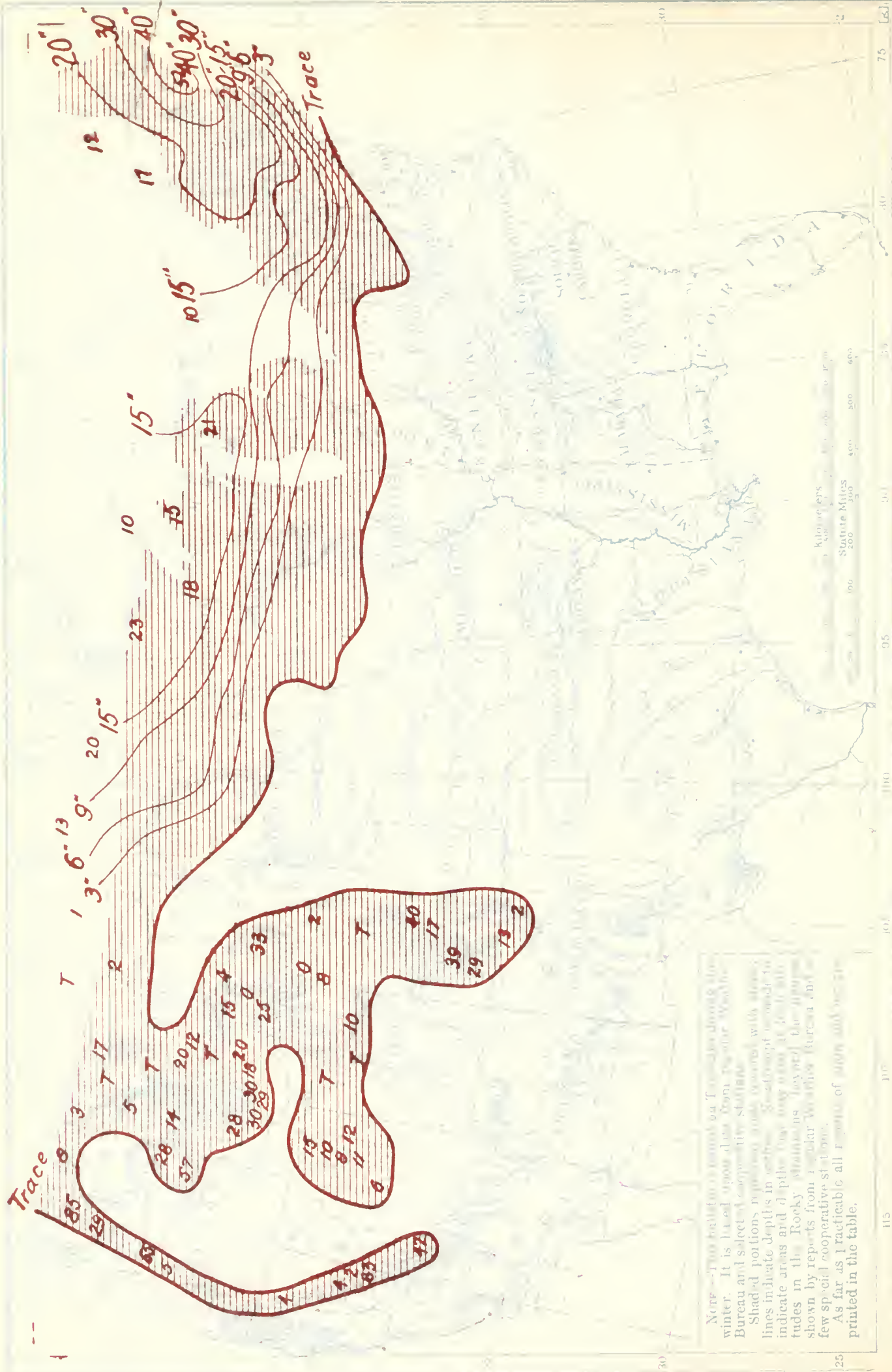
P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., JANUARY 15, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>California.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>New Hampshire.</i>	<i>Inches.</i>	<i>Inches.</i>
Huntington Lake ...	42	.....	Berlin	28	.....
McCloud	4	.....	Concord	32	18.5
Summit	83	.....	Keene	27	.....
<i>Colorado.</i>			Pittsburg	25	.....
Dillon	40	.....	<i>New Jersey.</i>		
Leadville	17	.....	Elizabeth	6	.....
Rico	29	.....	Newton	14	.....
<i>Connecticut.</i>			Phillipsburg	6	.....
Hartford	21	8.0	<i>New Mexico.</i>		
New Haven	14	0.0	Chama	13	.....
<i>Idaho.</i>			Elizabethtown	2	.....
Hailey	20	.....	<i>New York.</i>		
Mackay	8	.....	Albany	17	2
Porthill	3	.....	Albany	15	.....
Soldier Creek	29	.....	Bin	11	.....
Spencer	20	.....	But	9	4.0
<i>Indiana.</i>			Canton	10	.....
Fort Wayne	3	.....	Cutchogue	2	.....
Howe	2	.....	Lowville	24	.....
Notre Dame	1	.....	New York	2	0.0
<i>Iowa.</i>			Oswego	15	11.5
Davenport	T.	8.0	Poughkeepsie	20	.....
Des Moines	T.	8.0	Rochester	24	6.0
Dubuque	T.	11.0	Syracuse	14	.....
Estherville	2	.....	Warwick	18	.....
Pocahontas	1	.....	<i>North Dakota.</i>		
Sioux City	T.	9.0	Egan	7	18.0
<i>Maine.</i>			Devils Lake	7	.....
Cornish	34	.....	Williston	2	15.0
Eastport	31	0.0	<i>Ohio.</i>		
Gardiner	39	9.0	Ashland	2	.....
Greenville	26	19.0	Cleveland	T.	2.0
Houlton	24	.....	Sandusky	T.	6.0
Millinocket	26	.....	Toledo	1	*
Portland	52	0.0	<i>Pennsylvania.</i>		
<i>Massachusetts.</i>			Allentown	5	.....
Boston	13	0.0	Emporium	13	.....
Holyoke	24	8.0	Erie	3	8.0
Williamstown	21	.....	Gordon	6	.....
<i>Michigan.</i>			Harrisburg	2	†
Alpena	9	5.0	Mifflintown	5	.....
Battle Creek	4	.....	Scranton	6	.....
Cadillac	10	.....	Towanda	6	.....
Detroit	5	8.0	Williamsport	11	.....
Escanaba	15	16.0	<i>Rhode Island.</i>		
Grand Haven	2	.....	Kingston	9	.....
Grand Rapids	3	.....	Providence	7	0.0
Houghton	15	11.5	<i>South Dakota.</i>		
Iron Mountain	16	.....	Huron	0	14.5
Lansing	5	.....	Yankton	0	12.0
Ludington	7	.....	<i>Vermont.</i>		
Marquette	15	0.0	Brattleboro	28	8.0
Menominee	15	.....	Burlington	16	*
Port Huron	6	5.5	Northfield	24	.....
Saginaw	3	9.0	St. Johnsbury	21	.....
Sault Ste. Marie	10	12.0	<i>Washington.</i>		
<i>Minnesota.</i>			Cascade Tunnel	85	.....
Collegeville	6	.....	Laurier	8	.....
Duluth	18	14.5	<i>Wisconsin.</i>		
Fort Ripley	12	.....	Green Bay	6	6.0
Minneapolis	4	.....	La Crosse	1	10.0
Moorhead	7	.....	Medford	11	.....
St. Paul	3	*	Milwaukee	2	0.0
<i>Montana.</i>			Rhineland	16	.....
Belton	17	.....	Wausau	5	12.5
Red Lodge	4	.....	<i>Wyoming.</i>		
Silver Lake	20	.....	Alta	25	.....
<i>Nevada.</i>			Casper	2	.....
Arthur	12	.....	Evanston	10	.....
North Fork	10	.....	Yellowstone Park	15	.....

*Shore ice. †Floating ice. ‡Ice gorged. §Measurement impracticable.
T. indicates trace.

Depth of Snow on Ground, 8 p. m., January 15, 1923.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CHARLES F. MARVIN, Chief.

No. 4.

WASHINGTON, D. C., JANUARY 23, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

Important changes in weather conditions were confined mainly to the northern districts from the Rocky Mountains eastward, but were marked there at times, particularly as regards temperatures, where changes in 24 hours ranged up to 50° or more, and at points slightly north of the international boundary they were above 60°, and near the northern shore of Lake Superior a change of 72° in 24 hours was reported. Elsewhere temperature changes were usually moderate, no severe cold being reported, save over northern New York and generally in New England where the week was mainly cold, temperatures as low as -20° being reported from central Maine. Moderately cold weather prevailed over the Southeastern States during the early part of the week and light frost was reported as far south as Miami, Fla.

Precipitation was light and confined mainly to the more northern districts until near the end of the week, when some heavy rains occurred in the west Gulf, lower Ohio and middle Mississippi Valleys, and more or less rain or snow occurred very generally from eastern Texas to the middle Mississippi and lower Ohio Valleys, and thence northeastward to New England.

DEPTH OF SNOW.

The week was mainly free from important snowfall over extensive regions, but high winds about the 18th caused much drifting of the snow already on the ground over portions of New York, greatly interfering with steam and electric traffic and closing many of the main roads to automobile and other means of transportation.

Compared with last week there has been no material change in the snow-covered area, but the depth on the ground has decreased materially from the Great Lakes eastward, particularly from northern Pennsylvania to southern New England where the decreases range from 5 to 15 inches or more. No marked changes in the snow depths occurred in the western mountains, but in most districts there were slight decreases. A few points, however, had small increases, notably in the mountains of central California, and locally in Idaho. Also in northern New England and the adjacent portions of Canada, as well as in the Lake Superior district there were some increases over the amounts reported a week ago.

As shown on the chart at the back, the greater part of the winter wheat area is without a snow cover and there was much light freezing and thawing.

ICE IN RIVERS AND HARBORS.

In the absence of important cold during the week, save along the northern border, but little new ice formed to the southward of the regions where it prevailed a week ago, and even in the more northern districts the increase in thickness was mainly small, so that conditions remain substantially as reported last week.

The ice harvest is progressing satisfactorily in the districts where the thickness permits of this work, save in portions of New England where unfavorable conditions due to heavy snow have hindered progress. No material amount of ice has yet been harvested in the central districts where supplies for home use only are usually gathered.

The harbors of the Great Lakes are mostly ice-covered, but the thickness is only moderate.

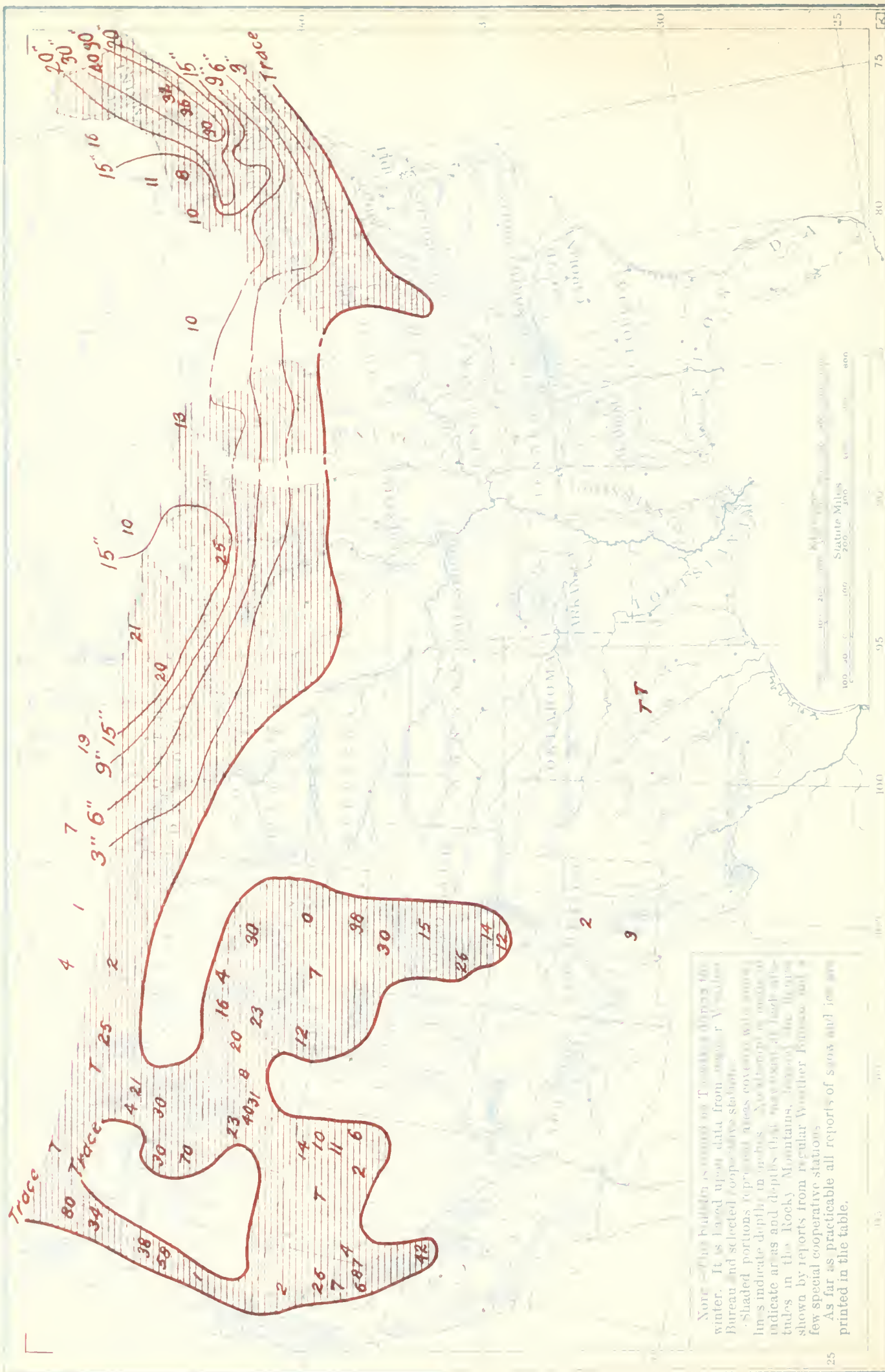
P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., JANUARY 22, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>California.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>New Hampshire.</i>	<i>Inches.</i>	<i>Inches.</i>
Emigrant Gap.....	6	.....	Berlin.....	26	.....
Huntington Lake...	42	.....	Concord.....	27	15.0
Sierraville.....	7	.....	Durham.....	14	.....
Summit.....	87	.....	Keene.....	18	.....
<i>Colorado.</i>			Pittsburg.....	26	.....
Leadville.....	15	.....	<i>New Jersey.</i>		
<i>Connecticut.</i>			Newton.....	4	.....
Hartford.....	11	9.0	<i>New Mexico.</i>		
New Haven.....	6	0.0	Chama.....	12	.....
West Cornwall.....	30	.....	Cloudcroft.....	3	.....
<i>Idaho.</i>			Corona.....	2	.....
Hailey.....	21	.....	<i>New York.</i>		
Ketchum.....	29	.....	Albany.....	7	8.0
Mackay.....	8	.....	Binghamton.....	3	.....
Soldier Creek.....	29	.....	Buffalo.....	2	4.0
Spencer.....	20	.....	Canton.....	3	.....
<i>Iowa.</i>			Fredonia.....	3	.....
Davenport.....	0	9.5	Herkimer.....	16	.....
Des Moines.....	0	9.0	Ithaca.....	4	.....
Dubuque.....	0	13.0	Ogdensburg.....	10	.....
Sioux City.....	0	8.0	Plattsburg.....	3	.....
<i>Maine.</i>			Poughkeepsie.....	12	.....
Cornish.....	36	.....	Rochester.....	12	6.0
Eastport.....	11	0.0	Roxbury.....	14	.....
Gardiner.....	32	12.0	Saranac Lake.....	6	.....
Greenville.....	25	20.0	Saratoga Springs.....	24	.....
Portland.....	34	0.0	Syracuse.....	5	.....
Van Buren.....	17	.....	Warwick.....	8	.....
<i>Massachusetts.</i>			<i>North Dakota.</i>		
Amherst.....	5	.....	Bismarck.....	6	20.0
Boston.....	6	0.0	Devils Lake.....	5	.....
Holyoke.....	18	.....	Williston.....	1	17.5
Williamstown.....	8	.....	<i>Ohio.</i>		
<i>Michigan.</i>			Cleveland.....	0	4.5
Alpena.....	6	6.0	Sandusky.....	0	7.0
Detroit.....	T.	6.0	Toledo.....	0	4.5
Grand Haven.....	1	.....	<i>Oregon.</i>		
Grand Rapids.....	1	.....	Detroit.....	1	.....
Grayling.....	14	.....	Government Camp.....	58	.....
Harrisville.....	8	.....	Sled Springs.....	30	.....
Houghton.....	17	13.0	<i>Pennsylvania.</i>		
Lansing.....	4	.....	Emporium.....	8	.....
Ludington.....	3	.....	Erie.....	T.	8.5
Mackinaw.....	12	.....	Franklin.....	2	.....
Mancelona.....	10	.....	Harrisburg.....	T.	5.0
Marquette.....	13	0.0	Scranton.....	2	.....
Port Huron.....	3	7.0	Towanda.....	2	.....
Saginaw.....	2	9.5	Warren.....	3	.....
Sault Ste. Marie.....	13	14.0	Williamsport.....	6	.....
<i>Minnesota.</i>			<i>Rhode Island.</i>		
Collegeville.....	4	.....	Block Island.....	1	0.0
Duluth.....	15	16.0	Providence.....	2	0.0
Ely.....	18	.....	<i>South Dakota.</i>		
Grand Meadow.....	2	.....	Huron.....	0	15.0
International Falls.....	21	.....	Yankton.....	0	12.0
Leech Lake Dam.....	18	.....	<i>Vermont.</i>		
Minneapolis.....	3	.....	Brattleboro.....	17	15.0
Moorhead.....	5	.....	Burlington.....	7	*†
Roseau.....	18	.....	St. Johnsbury.....	18	.....
St. Paul.....	3	†	<i>Washington.</i>		
Thief River Falls.....	20	.....	Cascade Tunnel.....	80	.....
<i>Montana.</i>			Stampede.....	34	.....
Belton.....	25	.....	<i>Wisconsin.</i>		
Haugan.....	21	.....	Ashland.....	18	.....
Havre.....	2	.....	Green Bay.....	4	9.0
Red Lodge.....	4	.....	Wausaw.....	3	13.0
<i>Nevada.</i>			<i>Wyoming.</i>		
Arthur.....	11	.....	Alta.....	23	.....
Hylton.....	6	.....	Foxpark.....	38	.....
North Fork.....	10	.....	Yellowstone Park.....	16	.....

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable.
T. indicates trace.

Depth of Snow on Ground, 8 p. m., January 22, 1923.



Note.—This bulletin is issued by the U. S. Weather Bureau during the winter. It is based upon data from regular weather stations. Shaded portions represent areas covered with snow. Lines indicate depths in inches. Numbers in circles indicate areas and depths that may occur at each station in the Rocky Mountains, based on the figures shown by reports from regular weather stations and a few special cooperative stations.

As far as practicable all reports of snow and ice are printed in the table.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CHARLES F. MARVIN, Chief.

No. 5.

WASHINGTON, D. C., JANUARY 30, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

Temperature conditions during the week remained moderate in most localities as has been the case during the winter so far. During the first few days of the week just closed sharp changes in temperature occurred over the northern districts, but the remainder of the week was mainly without the adverse weather conditions usually expected in midwinter. The lowest temperature reported during the week in the United States, 18° below zero, occurred in New England, and only in a few instances were lower values reported from Canada.

At the beginning of the week general rains overspread the Gulf States, the storm area gradually extending during the first two or three days over nearly all districts to eastward of the Mississippi River. Rain changed to sleet over portions of the Ohio Valley and Middle Atlantic States, and to snow in the Appalachian Mountain districts and from the Great Lakes eastward. Precipitation from this storm was heavy in portions of the Gulf and Atlantic Coast States and moderately heavy snow occurred in the mountains from Virginia northward and over the lower elevations from Maryland and West Virginia to New England.

The early and middle portions of the week were mainly free from extensive precipitation in the western districts, except in portions of California and adjacent States, but during the last few days widespread precipitation, mostly light, however, prevailed from the far Northwest southeasterly over the central Plateau, Mountain, and Plains States to the middle Mississippi Valley, and thence over most districts to the Atlantic coast.

DEPTH OF SNOW.

Compared with the preceding week the depth of snow increased materially in many districts, although the snow-covered area remains substantially as in previous weeks. In the northeastern districts the increases during the week ranged up to 10 inches, and drifting caused the closing of many highways, particularly in central and northern New York.

In the Lakes region and upper Mississippi Valley increases in the snow depth were usually not more than 5 inches, but a good depth is now present, and conditions are ideal for logging operations.

In the far western districts increases occurred nearly everywhere, but they were mainly small in the Rocky Mountain and Plateau regions, save in western Colorado and southern Idaho, but heavy increases occurred in the mountains of California and to the northward. In portions of the Sierra Nevada the total fall for the week was more than 6 feet, and increases up to 2 feet or more occurred in some of the mountains of Oregon and Washington, and increases nearly as great were reported from the higher mountains of Idaho.

The heavy falls in the western mountains, as well as the smaller amounts at the lower elevations, greatly improved the present water supply for stock on the dry ranges and the outlook for the coming summer.

ICE IN RIVERS AND HARBORS.

Due to moderate temperatures no large increases in ice thickness were reported from any part of the country, and no new ice formed in districts where none had heretofore been reported. In fact, small amounts reported last week on the southern edge of the area having ice disappeared during the week. The weather was in the main satisfactory for the progress of harvesting where the ice thickness permitted, although in some northeast sections operations are being delayed on account of snow on the ice.

P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., JANUARY 29, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>Arizona.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Nevada.</i>	<i>Inches.</i>	<i>Inches.</i>
Flagstaff.....	7		Arthur.....	7	
Grand Canyon.....	5		Austin.....	8	
Prescott.....	4		Reno.....	7	
<i>California.</i>			Tonopah.....	4	
Huntington Lake...	80		Winnemucca.....	7	
Inskip.....	50		<i>New Hampshire.</i>		
Portola.....	27		Berlin.....	23	
Summit.....	164		Concord.....	30	16.0
<i>Colorado.</i>			Durham.....	17	
Cumbres.....	33		Hanover.....	22	
Durango.....	5		Pittsburg.....	27	
Leadville.....	15		<i>New Jersey.</i>		
Rico.....	37		Lakewood.....	3	
<i>Connecticut.</i>			Sandy Hook.....	2	0.0
New Haven.....	9	0.0	<i>New Mexico.</i>		
<i>Delaware.</i>			Chama.....	18	
Wilmington.....	2		Elizabethtown.....	4	
<i>Idaho.</i>			<i>New York.</i>		
Hailey.....	39		Albany.....	13	10.0
Mackay.....	15		Binghamton.....	9	
North Star Mine.....	32		Buffalo.....	6	7.0
Pocatello.....	5		Canton.....	7	
<i>Illinois.</i>			New York.....	2	0.0
Chicago.....	1		Oswego.....	14	12.0
Walnut.....	2		Rochester.....	17	7.0
<i>Iowa.</i>			Syracuse.....	11	
Davenport.....	1	9.5	Warwick.....	15	
Des Moines.....	2	9.0	<i>North Dakota.</i>		
Dubuque.....	2	13.0	Bismarck.....	7	22.0
Sioux City.....	2	10.0	Devils Lake.....	5	
<i>Maine.</i>			Williston.....	4	20.0
Cornish.....	40		<i>Ohio.</i>		
Eastport.....	12	0.0	Cleveland.....	T.	4.5
Gardiner.....	38	16.0	Sandusky.....	0	5.0
Greenville.....	29	22.0	Toledo.....	T.	4.0
Houlton.....	48		<i>Oregon.</i>		
Portland.....	38	0.0	Imperial Mine.....	71	
Van Buren.....	19		Lakeview.....	8	
<i>Maryland.</i>			Siskiyou.....	15	
Baltimore.....	T.	0.0	<i>Pennsylvania.</i>		
<i>Massachusetts.</i>			Allentown.....	5	
Boston.....	8	0.0	Erie.....	4	9.0
Holyoke.....	18		Harrisburg.....	4	*
Nantucket.....	2	0.0	Mifflintown.....	12	
Williamstown.....	16		Philadelphia.....	2	0.0
<i>Michigan.</i>			Scranton.....	8	
Cadillac.....	11		<i>Rhode Island.</i>		
Detroit.....	1	6.0	Block Island.....	2	0.0
Escanaba.....	10	19.0	Providence.....	6	0.0
Grand Haven.....	2		<i>South Dakota.</i>		
Grand Rapids.....	1		Huron.....	3	12.0
Houghton.....	18	12.0	Pierre.....	1	14.5
Ludington.....	4		Yankton.....	1	14.0
Mancelona.....	14		<i>Utah.</i>		
Marquette.....	15	1.0	Salt Lake City.....	5	
Port Huron.....	5	7.0	<i>Vermont.</i>		
Saginaw.....	3	9.0	Brattleboro.....	24	15.0
Sault Ste. Marie.....	15	15.5	Northfield.....	22	
<i>Minnesota.</i>			St. Johnsbury.....	24	
Duluth.....	18	18.0	<i>Washington.</i>		
Fort Ripley.....	14		Cascade Tunnel.....	92	
Minneapolis.....	7		Laurier.....	13	
Roseau.....	18		Stampede.....	58	
St. Paul.....	8	†	<i>Wisconsin.</i>		
<i>Montana.</i>			Green Bay.....	6	9.0
Belton.....	18		La Crosse.....	4	15.0
Hayre.....	3		Medford.....	14	
Red Lodge.....	4		<i>Wyoming.</i>		
<i>Nebraska.</i>			South Pass City.....	9	
Omaha.....	1	*†	Yellowstone Park...	21	

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable.
T. indicates trace.

Depth of Snow on Ground, 8 p. m., January 29, 1923.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 6.

WASHINGTON, D. C., FEBRUARY 6, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

Rapid changes in weather conditions, particularly along the northern border, continued during the week, as has been the case for a considerable period, but without severely low temperatures until near the end.

On Friday morning low temperatures appeared in the Canadian Northwest Provinces and by Saturday morning the severest cold of the season had advanced into the Missouri Valley, with zero temperatures as far south as Kansas. This cold wave advanced rapidly to the northeastward, and more slowly southward, the temperature falling to more than 30° below zero in northern New York by Sunday morning, a change of 50° within the preceding 24 hours. Over the southern districts the advance of the cold wave had been checked somewhat by cloudy, rainy weather, but the line of freezing temperature had extended to near the west Gulf coast.

Precipitation during the week was scattered, and except in a few localities, was mainly light to moderate. Heavy rains were reported over considerable areas in the lower Ohio and middle Mississippi Valleys during the 1st and 2d, and snows or rains were rather general during Saturday and Sunday over most districts from the Mississippi Valley eastward, continuing over the east Gulf and South Atlantic States at the end of the week.

DEPTH OF SNOW.

The snow-covered area at the close of the week was not materially greater than has existed for several weeks, save that over the southern Plains and in the middle Mississippi Valley there is a small area, with a trace or slightly more of snow that was bare last week, and a slightly southward projection into the southern Appalachian Mountain districts due to the general storm conditions of the past few days.

On the whole there has been but little increase in the depth of the snow cover existing a week ago, save at a few points in northern New England, locally in the upper Lake region and thence westward to Montana, and over portions of the middle Rocky Mountain and Plateau regions.

On the other hand there was a material settling or melting of the snow over the Middle Atlantic States, from the lower Lakes westward to Iowa, and locally in the western mountain regions. In the Sierra and Cascade ranges there was a decided reduction in the snow depths at the higher elevations, due probably to settling rather than melting. At Summit, Calif., the reduction in depth was slightly more than 40 inches.

There is now a fairly good amount of stored snow in most of the western mountains, particularly in central California, Nevada, Oregon, southern Idaho, and portions of Colorado and Wyoming.

ICE IN RIVERS AND HARBORS.

The generally severe cold during the latter part of the week caused a considerable increase in ice thickness on the streams and lakes of the districts where ice had previously formed, but there was little extension southward into the area where it had not formed so far this winter.

There is practically no ice on the main streams of the Ohio system, nor on those of the Atlantic coast south of the Hudson, although on ponds and quiet streams of the more northern portions of these regions considerable ice may now have formed.

The ice harvest is progressing in the more northern districts, except in localities where heavy snow is delaying operations.

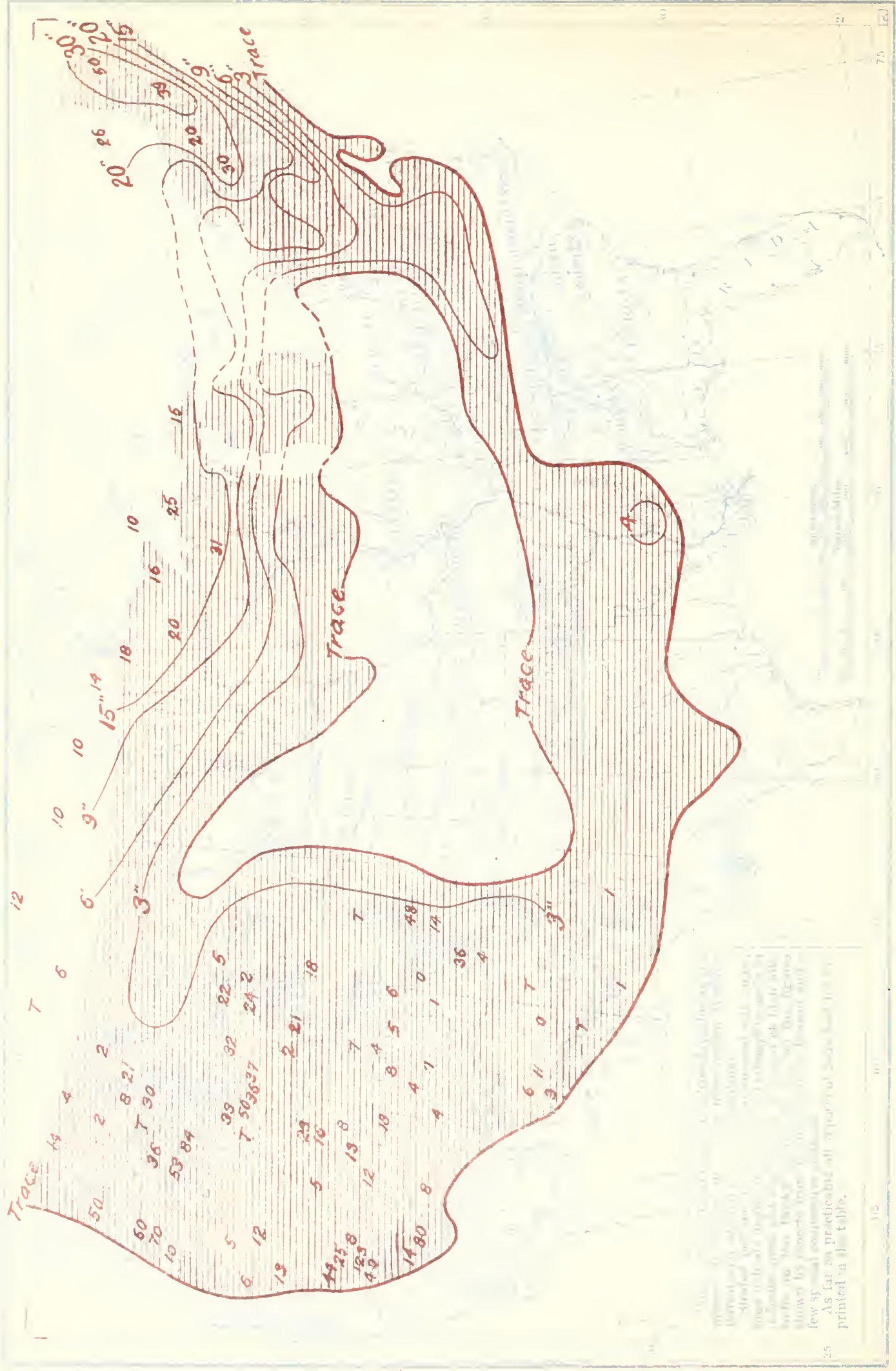
P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., FEBRUARY 5, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>Arizona.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>New Hampshire.</i>	<i>Inches.</i>	<i>Inches.</i>
Flagstaff	11	.....	Concord	25	17.0
<i>California.</i>			Keene	20	.....
Emigrant Gap	40	.....	Pittsburg	30	.....
Huntington Lake	80	.....	<i>New Jersey.</i>		
Inskip	44	.....	Cape May	4	0.0
Mount Wilson	17	.....	<i>New Mexico.</i>		
Summit	123	.....	Fort Bayard	1	.....
<i>Colorado.</i>			Roswell	1	.....
Dillon	45	.....	<i>New York.</i>		
Leadville	14	.....	Albany	10	12.0
Rico	36	.....	Beaver River	20	.....
<i>Connecticut.</i>			Buffalo	1	9.5
New Haven	4	0.0	Canton	8	.....
West Cornwall	20	.....	Plattsburg	12	.....
<i>Idaho.</i>			Rochester	10	9.0
Hailey	32	.....	Syracuse	5	.....
North Star Mine	26	.....	Warwick	10	.....
Porthill	4	.....	<i>North Dakota.</i>		
Spencer	32	.....	Bismarck	9	23.0
<i>Iowa.</i>			Devils Lake	6	.....
Des Moines	0	12.0	Williston	7	21.0
Dubuque	T.	15.0	<i>Oregon.</i>		
Keokuk	0	4.5	Detroit	10	.....
Sioux City	T.	11.5	Government Camp	70	.....
<i>Kentucky.</i>			Siskiyou	6	.....
Bowling Green	2	.....	Sled Springs	36	.....
Williamsburg	4	.....	<i>Pennsylvania.</i>		
<i>Louisiana.</i>			Allentown	2	.....
Shreveport	2	0.0	Emporium	10	.....
<i>Maine.</i>			Erie	0	8.0
Cornish	38	.....	Harrisburg	1	†
Eastport	13	0.0	Mifflintown	8	.....
Gardiner	39	20.0	Seranton	3	.....
Greenville	30	24.0	<i>South Dakota.</i>		
Portland	34	0.0	Huron	T.	16.5
Van Buren	19	.....	Pierre	T.	21.0
<i>Massachusetts.</i>			Yankton	T.	14.0
Boston	3	0.0	<i>Tennessee.</i>		
Williamstown	9	.....	Memphis	1	0.0
<i>Michigan.</i>			Nashville	T.	0.0
Alpena	6	10.0	<i>Texas.</i>		
Big Rapids	4	.....	Abilene	1	.....
Cadillac	8	.....	Dallas	T.	.....
Detroit	T.	11.0	San Antonio	T.	.....
Escanaba	8	21.0	<i>Utah.</i>		
Grayling	14	.....	Modena	4	.....
Houghton	25	15.0	Salt Lake City	7	.....
Marquette	14	6.0	<i>Vermont.</i>		
Saginaw	1	9.0	Brattleboro	19	15.0
Sault Ste. Marie	15	18.5	Northfield	20	.....
<i>Minnesota.</i>			<i>Virginia.</i>		
Duluth	14	20.5	Fredericksburg	5	.....
Leech Lake Dam	19	.....	Lynchburg	5	0.0
Minneapolis	8	.....	Norfolk	2	0.0
Moorhead	6	.....	Randolph	3	.....
Roseau	18	.....	Richmond	5	0.0
St. Paul	9	5.0	Staunton	2	.....
<i>Mississippi.</i>			Wytheville	7	.....
Vicksburg	6	0.0	<i>Washington.</i>		
<i>Montana.</i>			Spokane	2	.....
Haugan	21	.....	<i>Wisconsin.</i>		
Havre	3	.....	Green Bay	4	12.0
Kalispell	2	.....	La Crosse	2	16.0
Red Lodge	5	.....	Medford	12	.....
<i>Nevada.</i>			Rhineland	20	.....
Austin	12	.....	Wausau	4	17.0
Hylton	13	.....	<i>Wyoming.</i>		
North Fork	16	.....	Alta	24	.....
Tonopah	8	.....	South Pass City	18	.....
Winnemucca	5	.....	Yellowstone Park	22	.....

*Shore ice. †Floating ice. ‡Ice gorged. §Measurement impracticable.
T. indicates trace.

Depth of Snow on Ground, 8 p.m., February 5, 1923.



As far as practicable all figures of Snow Depth are printed in this table.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 7.

WASHINGTON, D. C., FEBRUARY 13, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

The rapidly changing atmospheric conditions that have been such a distinguishing feature of the weather during the present winter so far, particularly along the northern border and to a less extent in practically all other districts, were again in evidence during the past week.

The cold weather existing at the close of the preceding week over the west Gulf States continued into the week just ended, the temperature falling to freezing as far south as the mouth of the Rio Grande Tuesday morning, and during the following 2 or 3 days freezing temperature extended eastward over the Gulf coast districts as far as northern Florida.

In the meantime much colder weather had overspread the Missouri and upper Mississippi Valleys, 24-hour falls of more than 50° being reported from North Dakota. This cold wave, however, lost strength rapidly and was quickly followed by rising temperature, the changes to warmer being nearly as great as those to colder just preceding. Changes in temperature continued frequent during the remainder of the week, but they were much less pronounced, although low temperatures occurred on several dates in the far Southwest, reaching the freezing point at Yuma, Ariz., on Sunday morning.

Precipitation occurred in many districts, but the amounts were usually light, except on Saturday and Sunday, when it was moderately heavy over portions of the east Gulf and South Atlantic States.

DEPTH OF SNOW.

Compared with the preceding week, the depth of the snow cover was mainly greater in all northern districts, save from the shores of Lake Ontario northeastward to Maine, where there were material reductions. In the western mountain regions increases were general and in certain sections they were of considerable magnitude, notably in Washington, Oregon, and other portions of the northern Plateau, and locally in California, Arizona, and Utah. Over a narrow area from Virginia southwest to New Mexico, the slight covering reported a week ago quickly melted and the ground is now bare, and a considerable portion of the moderate covering over the southern Appalachian Mountains likewise disappeared.

The snow-covered area is somewhat less than was reported a week ago, the principal changes being the disappearance of the slight covering over a considerable area in the South, which disappeared during the week just closed.

The snow depth over New England is favorable for logging operations and similar conditions exist in the Lake Region.

The winter wheat area remains largely without a protecting snow cover, save in Oregon and Washington, where the principal falls during the week preceded the occurrence of severe cold.

High winds over North Dakota and thence eastward to the Lake Superior district caused much drifting and many highways are now blocked.

ICE IN RIVERS AND HARBORS.

Due to the absence of continued cold, there was no extension of the areas from which ice had been reported previously, although slight increases in the thickness already existing were generally observed.

The weather was mainly favorable for harvesting, and ice of good thickness was available in all northern districts, although on the Hudson and some of its tributaries there is much frozen snow mixed with the ice.

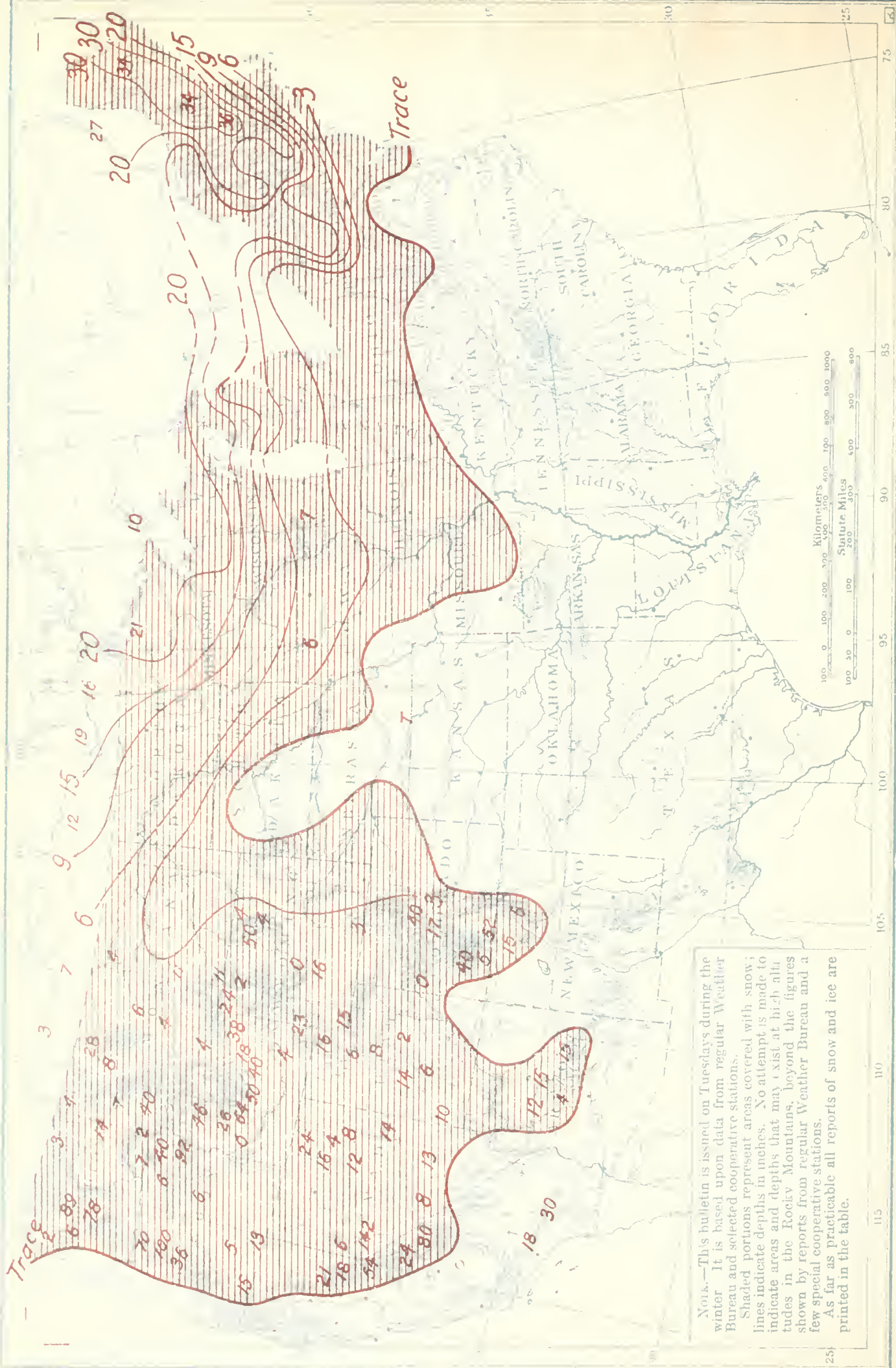
P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., FEBRUARY 12, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>Arizona.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>New Hampshire.</i>	<i>Inches.</i>	<i>Inches.</i>
Flagstaff	15	.....	Concord	28	18.0
<i>California.</i>			Durham	19	.....
Cascada	14	.....	Pittsburg	29	.....
Inskip	71	.....	<i>New Jersey:</i>		
Mount Wilson	18	.....	Sandy Hook	2	0.0
Summit	142	.....	Trenton	2	*
<i>Colorado.</i>			<i>New Mexico.</i>		
Denver	1	.....	Chama	15	.....
Durango	5	.....	<i>New York.</i>		
<i>Connecticut.</i>			Albany	10	12.5
Hartford	17	20.0	Alfred	13	.....
New Haven	6	0.0	Beaver River	24	.....
West Cornwall	23	.....	Ithaca	4	.....
<i>Idaho.</i>			Lowville	18	.....
Hailey	48	.....	Oswego	12	16.5
McCall	46	.....	Plattsburg	12	.....
Mackay	18	.....	Rochester	9	9.0
<i>Iowa.</i>			Saranac Lake	6	.....
Charles City	5	.....	Syracuse	5	.....
Des Moines	1	12.0	Warwick	16	.....
Dubuque	3	16.0	<i>North Dakota.</i>		
Keokuk	T.	5.0	Bismarck	8	25.0
Pocahontas	6	.....	Devils Lake	6	.....
Sioux City	T.	14.0	Williston	8	24.0
<i>Maine.</i>			<i>Ohio.</i>		
Cornish	34	.....	Cleveland	T.	4.5
Eastport	11	0.0	Marion	1	.....
Gardiner	31	21.0	<i>Oregon.</i>		
Greenville	28	25.0	Detroit	36	.....
Portland	32	0.0	Government Camp	100	.....
Van Buren	20	.....	Lakeview	13	.....
<i>Maryland.</i>			Siskiyou	15	.....
Oakland	2	.....	<i>Pennsylvania.</i>		
<i>Massachusetts.</i>			Emporium	13	.....
Boston	5	0.0	Harrisburg	2	5.0
Holyoke	20	.....	Mifflintown	6	.....
Nantucket	3	*†	Philadelphia	2	†
Williamstown	11	.....	Pittsburgh	1	0.0
<i>Michigan.</i>			Seranton	4	.....
Alpena	5	11.5	<i>Rhode Island.</i>		
Chatham	20	.....	Block Island	4	0.0
Detroit	3	12.0	Providence	3	0.0
Escanaba	12	22.5	<i>South Dakota.</i>		
Grand Haven	3	.....	Huron	T.	16.5
Grand Rapids	4	.....	Pierre	0	22.0
Houghton	19	19.0	Yankton	T.	15.0
Mancelona	16	.....	<i>Utah.</i>		
Marquette	16	8.0	Logan	16	.....
Menominee	18	.....	Modena	10	.....
Port Huron	4	10.0	Salt Lake City	6	.....
Saginaw	4	10.5	<i>Vermont.</i>		
Sault Ste. Marie	16	20.5	Brattleboro	20	16.0
<i>Minnesota.</i>			Burlington	7	12.0
Duluth	15	21.0	Northfield	20	.....
Fort Ripley	16	.....	<i>Washington.</i>		
International Falls	21	.....	Cascade Tunnel	89	.....
Minneapolis	6	.....	Laurier	15	.....
Moorhead	7	.....	Seattle	6	0.0
Roseau	18	.....	Spokane	14	.....
<i>Montana.</i>			Walla Walla	7	.....
Havre	4	.....	<i>Wisconsin.</i>		
Helena	4	.....	Green Bay	11	15.0
Kalispell	8	.....	La Crosse	7	18.0
<i>Nevada.</i>			Milwaukee	4	0.0
Arthur	8	.....	Park Falls	32	.....
Elko	4	.....	Wausau	12	18.0
McGill	14	.....	<i>Wyoming.</i>		
Reno	6	.....	Evanston	15	.....
Tonopah	8	.....	Sheridan	4	.....
Winnemucca	5	.....	Yellowstone Park	24	.....

*Shore ice. †Floating ice. ‡Ice gorged. §Measurement impracticable.
T. indicates trace.

Depth of Snow on Ground, 8 p. m., February 12, 1923.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CHARLES F. MARVIN, Chief.

No. 8.

WASHINGTON, D. C., FEBRUARY 20, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

Important changes in weather conditions at short intervals, referred to previously as a distinguishing feature of the weather so far during the present winter, continued for the first few days of the week just closed. The low temperatures over the Northwest at the beginning of the week, extended into the southern and eastern districts, and the coldest weather of the winter so far was reported on successive dates as the cold wave extended southward and eastward. Unusually high pressure accompanied this cold, and low temperatures prevailed steadily during the latter part of the week in nearly all parts of the country, freezing weather or frosts extending southward into the central portions of the Florida Peninsula. At the close, however, warmer weather had set in over most districts.

The early portion of the week had widespread precipitation, particularly over northern and central districts, mostly snow and usually comparatively light, except for some heavy rains near the coast of the Middle Atlantic States and in portions of the southern drainage area of the Ohio. The latter part of the week was mainly without precipitation, save for local snows in the Lake region and some heavy rains in extreme southern Texas.

DEPTH OF SNOW.

While snow fell over considerable areas during the early part of the week in the western mountain districts, and along the northern border, the permanent increases at the close were confined mainly to the districts from Minnesota and Iowa eastward, and here they were usually small, save from the lower Lake region northeastward over northern New York to and including most of New England, where the increases ranged up to 15 inches or more. In the western mountain districts the depth of snow decreased in practically all portions, though usually the changes were small, save in the Plateau region and the Sierra Nevada and Cascade Ranges, where the decreases were as much as 10 inches, and locally from 15 to 40 inches.

The snow-covered area is not greatly different from that of several weeks past, and the cold weather of the week found the winter wheat area mostly bare, or with only a slight snow cover.

In the western mountains there appears to be a satisfactory accumulation of snow at the high levels and the outlook for water during the coming summer is encouraging, save in the more southern districts where but little snow has fallen so far and only small amounts remained unmelted.

ICE IN RIVERS AND HARBORS.

Due to low temperatures for the greater part of the week considerable ice formed in the districts south of those from which it has been reported previously during the winter. In the districts where ice had already formed there were general increases, but not to the extent usually expected from the continued cold.

Ice harvest progressed in northern districts and is about finished in portions of New England, but is delayed on the Hudson and its tributaries on account of heavy snow. Farther south the continued cold during the week has probably caused the formation of sufficient ice to harvest in favorable localities.

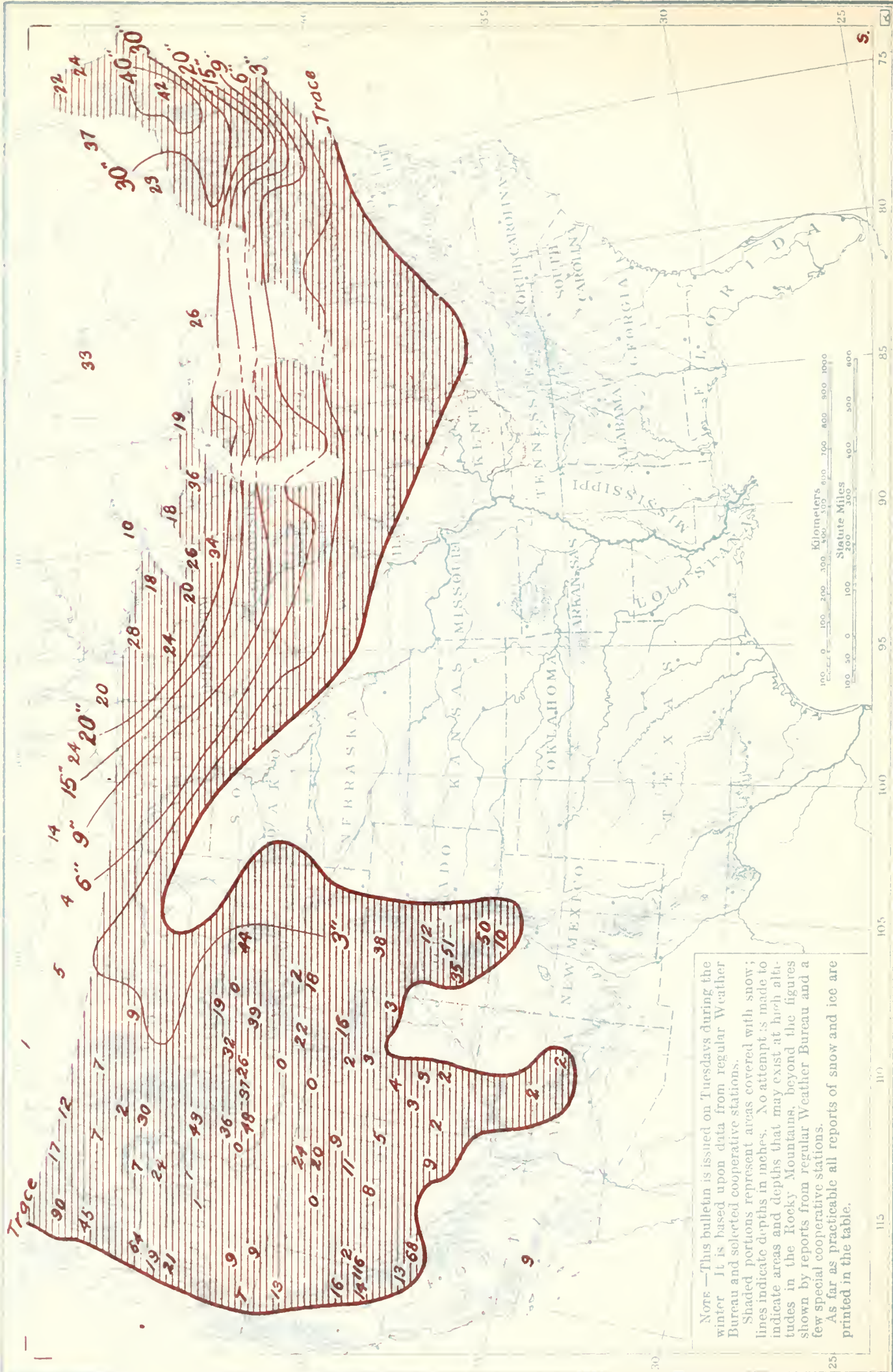
P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., FEBRUARY 19, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>Arizona.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Nevada.</i>	<i>Inches.</i>	<i>Inches.</i>
Flagstaff	2	.....	Austin	8	.....
<i>California.</i>			Hylton	11	.....
Huntington Lake ...	68	.....	North Fork	20	.....
Mount Wilson	9	.....	<i>New Hampshire.</i>		
Summit	116	.....	Concord	30	12.0
<i>Colorado.</i>			Hanover	24	.....
Cumbres	50	.....	Pittsburg	39	.....
Rico	35	.....	<i>New Jersey.</i>		
Steamboat Springs... 38	.....		Newton	7	.....
<i>Connecticut.</i>			<i>New Mexico.</i>		
Hartford	20	21.0	Chama	10	.....
New Haven	6	0.0	<i>New York.</i>		
West Cornwall	30	.....	Albany	12	14.0
<i>Dist. of Columbia.</i>			Buffalo	4	15.5
Washington	0	1.5	Canton	11	.....
<i>Idaho.</i>			New York	3	0.0
Hailey	37	.....	Oswego	21	21.5
McCall	43	.....	Rochester	14	10.0
Porthill	12	.....	Syracuse	8	.....
Spencer	32	.....	Warwick	15	.....
<i>Illinois.</i>			<i>North Dakota.</i>		
Chicago	4	.....	Bismarck	6	26.0
Peoria	T.	5.5	Devils Lake	8	.....
Walnut	2	.....	Ellendale	6	.....
<i>Iowa.</i>			Williston	6	25.0
Davenport	2	15.0	<i>Ohio.</i>		
Dubuque	2	20.5	Clarington	3	.....
Forest City	2	.....	Cleveland	2	8.5
Iowa Falls	4	.....	Sandusky	T.	12.0
Keokuk	0	8.0	<i>Oregon.</i>		
Pocahontas	4	.....	Detroit	21	.....
Sioux City	T.	15.0	Lakeview	9	.....
Waterloo	2	.....	Sled Springs	24	.....
<i>Maine.</i>			Welches	19	.....
Eastport	30	0.0	<i>Pennsylvania.</i>		
Greenville	37	26.0	Erie	3	10.0
Portland	42	0.0	Hartisburg	T.	†
Van Buren	22	.....	Seranton	3	.....
<i>Massachusetts.</i>			Williamsport	5	.....
Boston	8	0.0	<i>Rhode Island.</i>		
Holyoke	20	.....	Block Island	3	0.0
Nantucket	2	6.0	Providence	6	4.0
Williamstown	15	.....	<i>South Dakota.</i>		
<i>Michigan.</i>			Huron	T.	17.5
Adrian	4	.....	Yankton	0	16.0
Alpena	7	13.0	<i>Utah.</i>		
Big Rapids	13	.....	Black Rock	3	.....
Cadillac	15	.....	Duchesne	4	.....
Detroit	3	13.5	Provo	3	.....
Escanaba	10	24.0	Watson	5	.....
Grand Rapids	6	.....	<i>Vermont.</i>		
Houghton	18	19.5	Brattleboro	26	16.0
Maple Ridge	36	.....	Burlington	12	13.0
Marquette	16	15.0	Northfield	25	.....
Menominee	24	.....	<i>Washington.</i>		
Port Huron	5	15.0	Cascade Tunnel	90	.....
Saginaw	5	11.0	Spokane	7	.....
Sault Ste. Marie	19	21.0	Walla Walla	7	.....
<i>Minnesota.</i>			<i>Wisconsin.</i>		
Collegeville	12	.....	Ashland	26	.....
Duluth	20	23.0	Green Bay	11	17.0
Fort Ripley	18	.....	La Crosse	8	20.0
Leech Lake Dam	24	.....	Medford	16	.....
Moorhead	9	.....	Park Falls	34	.....
Roseau	22	.....	Wausau	13	17.5
St. Paul	9	15.0	<i>Wyoming.</i>		
Thief River Falls	23	.....	Alta	39	.....
<i>Montana.</i>			Evanston	16	.....
Cascade	9	.....	South Pass City	18	.....
Kalispell	7	.....	Yellowstone Park	19	.....

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable.
T. indicates trace.

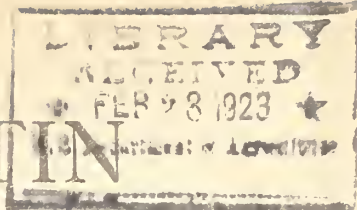
Depth of Snow on Ground, 8 p.m., February 19, 1923



NOTE.—This bulletin is issued on Tuesdays during the winter. It is based upon data from regular Weather Bureau and selected cooperative stations. Shaded portions represent areas covered with snow; lines indicate depths in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond the figures shown by reports from regular Weather Bureau and a few special cooperative stations. As far as practicable all reports of snow and ice are printed in the table.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.



No. 9.

WASHINGTON, D. C., FEBRUARY 27, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

Steady cold similar to that of the preceding week, though not so pronounced, marked the weather of the week just closed over the Southeastern States. In other districts temperature changes were moderately frequent, but in the main they were not excessive, and readings below zero were confined to the extreme northern districts. The lowest reported, -14° , occurred during the early part of the week. Heavy frosts were reported as far south as central Florida at the beginning of the week, and again in the northern part of that State toward the end.

The greater part of the week was free from important precipitation, although light snows were reported on several dates in the region of the Great Lakes and some heavy rains occurred in southern Texas about the middle. The latter part of the week brought general rains over central and southern districts, from the Great Plains eastward and local snows in portions of the Rocky Mountains, and in the Northeastern States.

SNOW ON GROUND.

In general, the snow-covered area remains similar to the conditions that have existed for a number of weeks, the only important change being in the Ohio Valley region where the slight snow covering of a week ago has mostly disappeared. The depth of the cover, however, has been materially reduced over nearly all portions of the country and the decrease has been marked in a number of localities. The principal increases during the week were in central and northern New York and over the eastern slopes of the Rocky Mountains from Wyoming to New Mexico, the largest increases, ranging up to 10 inches or more, occurring in the southern part of the latter State.

The decreases were large, frequently 5 to 10 inches or more in the Lake region, and they were only slightly less in portions of the upper Mississippi Valley and North Dakota. In the western mountain regions there were practically no increases in the snow depth, save as indicated above, and in many portions the decreases were marked. This was notably so in the Sierra and Cascade ranges and locally in the elevated portions of eastern Oregon, eastern Washington, and the adjacent portions of Idaho.

As shown by the chart on the reverse side, the winter wheat area continues without material cover, as has been the case during the greater part of the winter so far.

ICE IN RIVERS AND HARBOURS.

Higher temperatures during the week just closed caused a general decrease in the ice thickness over nearly all streams in the central and southern portions of the districts where ice had previously formed. Over the harbors of the Great Lakes the ice thickness increased slightly, as a rule, and there were general increases over the Northeastern States. The Missouri River is now heavily ice-covered from Sioux City, Iowa, northward, and the Mississippi River from Keokuk northward. The Ohio and its tributaries are mostly free of ice, and the main streams of the Atlantic coast south of the Hudson are likewise open, although in their upper reaches there is doubtless considerable ice.

Conditions were favorable for ice harvest and it is probable the recent cold enabled the gathering of moderate supplies in favorable localities over the districts as far south as ice is usually stored.

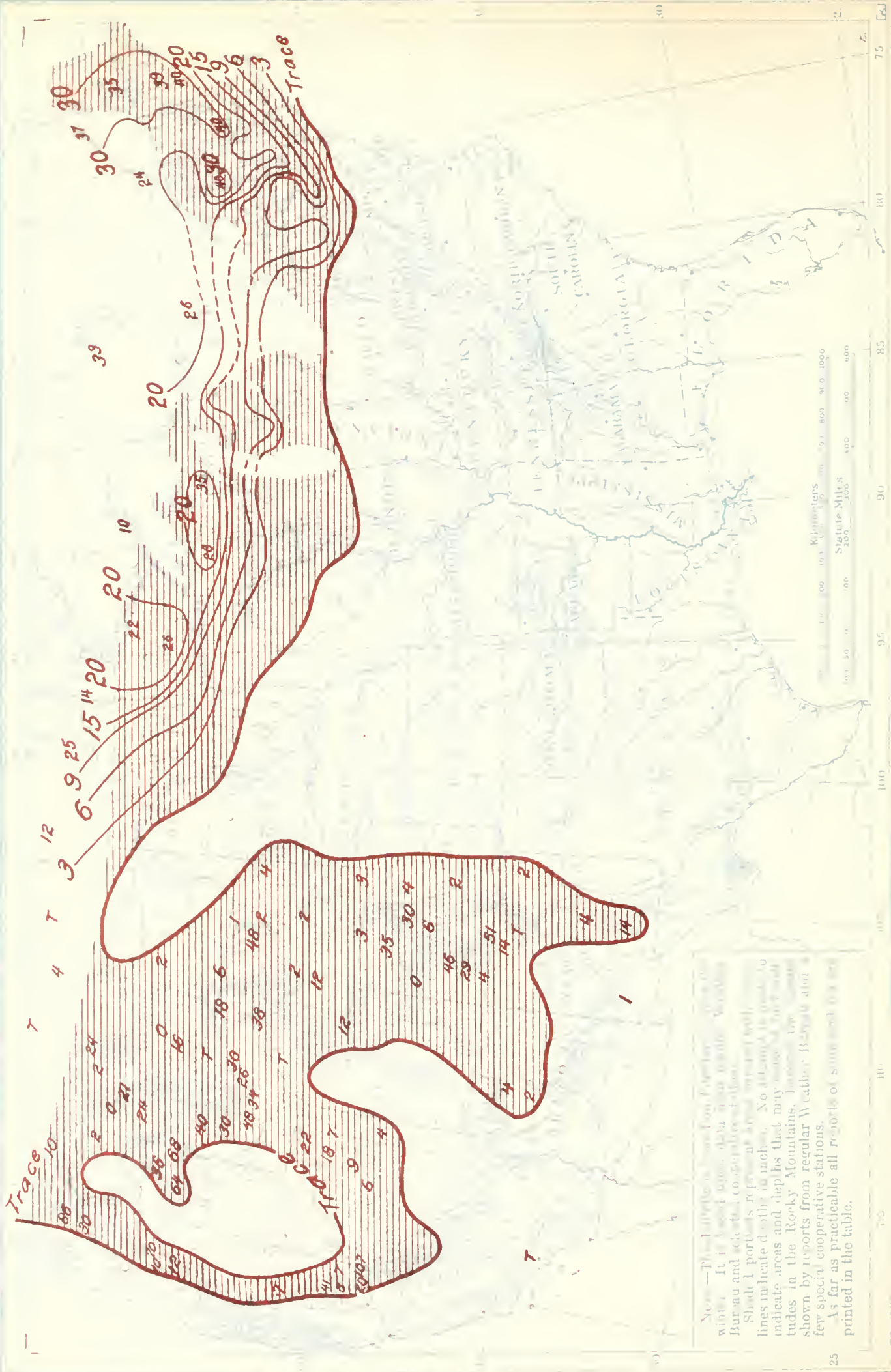
P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., FEBRUARY 26, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>Arizona.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>New Hampshire.</i>	<i>Inches.</i>	<i>Inches.</i>
Grand Canyon	4	.....	Berlin	28	.....
Pinto	1	.....	Concord	26	22.0
Williams	3	.....	Hanover	24	.....
<i>California.</i>			Keene	25	.....
Sierraville	8	.....	Pittsburg	35	.....
Summit	107	.....	<i>New Mexico.</i>		
<i>Colorado.</i>			Chama	14	.....
Cumbres	51	.....	Cloudcroft	14	.....
Denver	4	.....	Corona	4	.....
Dillon	30	.....	<i>New York.</i>		
Durango	4	.....	Albany	9	14.0
Steamboat Springs	35	.....	Beaver River	40	.....
<i>Connecticut.</i>			Buffalo	1	16.0
Hartford	16	21.0	Canton	13	.....
New Haven	4	0.0	De Ruyter	30	.....
<i>Idaho.</i>			Ithaca	5	.....
Hailey	34	.....	Lowville	36	.....
McCall	40	.....	Malone	16	.....
North Star Mine	26	.....	Oswego	20	24.0
Spencer	30	.....	Plattsburg	14	.....
<i>Iowa.</i>			Rochester	10	9.0
Davenport	T.	15.0	Rome	22	.....
Des Moines	0	13.0	Saranac Lake	15	.....
Dubuque	T.	21.0	Syracuse	7	.....
Sioux City	0	16.0	Watertown	10	.....
<i>Maine.</i>			<i>North Dakota.</i>		
Cornish	36	.....	Bismarck	3	28.0
Eastport	29	0.0	Devils Lake	5	.....
Gardiner	39	22.0	Williston	T.	25.0
Greenville	35	26.5	<i>Ohio.</i>		
Portland	40	7.0	Cleveland	T.	9.0
Van Buren	18	.....	Sandusky	0	11.0
<i>Massachusetts.</i>			Toledo	0	10.0
Boston	6	0.0	<i>Oregon.</i>		
Holyoke	20	.....	Detroit	12	.....
Nantucket	T.	8.0	Government Camp	70	.....
Williamstown	14	.....	Imperial Mine	64	.....
<i>Michigan.</i>			Sled Springs	36	.....
Alpena	3	14.0	<i>Pennsylvania.</i>		
Big Rapids	8	.....	Emporium	6	.....
Cadillac	11	.....	Freeland	28	.....
Detroit	T.	15.0	Williamsport	5	.....
Grand Rapids	1	.....	<i>Rhode Island.</i>		
Houghton	16	21.0	Block Island	2	0.0
Mancelona	15	.....	Kingston	5	.....
Marquette	16	16.5	Providence	4	†
Menominee	15	.....	<i>South Dakota.</i>		
Port Huron	2	17.0	Huron	0	14.5
Saginaw	1	13.5	Pierre	0	21.5
Sault Ste. Marie	15	20.0	Yankton	0	17.0
<i>Minnesota.</i>			<i>Vermont.</i>		
Duluth	8	22.5	Brattleboro	25	17.0
Fort Ripley	19	.....	Burlington	11	15.0
International Falls	22	.....	Northfield	26	.....
Leech Lake Dam	26	.....	<i>Washington.</i>		
Moorhead	8	.....	Cascade Tunnel	86	.....
Roseau	22	.....	Laurier	10	.....
St. Paul	T.	7.5	Stampede	30	.....
Thief River Falls	24	.....	<i>Wisconsin.</i>		
<i>Montana.</i>			Green Bay	3	16.0
Belton	24	.....	La Crosse	T.	19.0
Haugan	21	.....	Park Falls	28	.....
Kalispell	2	.....	Rhineland	24	.....
Red Lodge	6	.....	Wausau	8	16.0
<i>Nevada.</i>			<i>Wyoming.</i>		
Arthur	7	.....	Alta	38	.....
Austin	6	.....	Cheyenne	3	.....
Hylton	9	.....	Evanston	12	.....
McGill	4	.....	South Pass City	12	.....
North Fork	18	.....	Yellowstone Park	18	.....

*Shore ice. †Floating ice. ‡Ice gorged. §Measurement impracticable.
T. indicates trace.

Depth of Snow on Ground, 8 p. m., February 26, 1923.



Note.—This map is based on the following data:—
 1. It is based upon data from the following sources:
 Bureau and local cooperative stations.
 2. Shaded portions represent areas where the depth of snow was 10 inches or more.
 3. Contour lines indicate depths in inches. No attempt is made to indicate areas and depths that may occur in the mountains in the Rocky Mountains. In some cases the data shown by reports from regular Weather Bureau stations and a few special cooperative stations.
 4. As far as practicable all reports of snow depth are printed in the table.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.



No. 10.

WASHINGTON, D. C., MARCH 6, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

Some slowing down of the rapid sequences in weather changes that had prevailed so persistently during the present winter was in effect during the early part of the week just closed, but the latter part again showed rapid movements.

A cyclonic storm central in Colorado on the morning of the 3d had moved to the Great Lakes and thence to the vicinity of Nova Scotia by the morning of the 5th.

Temperatures were in the main moderate, and frequently well above the normal, particularly near the end of the week over the more eastern districts. A cold wave of moderate severity overspread the central valleys and Northwest on Saturday and Sunday, but lost energy as it moved to the more eastern districts at the close of the week.

Some heavy rains occurred over the Gulf and Atlantic coast districts early in the week, and widespread precipitation, though mostly light to moderate, fell during the latter part of the week, from the Plateau region eastward. In portions of the central Plains and middle Mississippi Valley the rainfall was locally heavy, and considerable snow occurred in the Rocky Mountain regions and over the northern districts from the Great Lakes eastward.

The week was mainly without material precipitation in the far West, a condition somewhat unusual at this period of the year.

DEPTH OF SNOW.

There was a substantial reduction in the depth of the snow cover during the week from the Great Lakes eastward, particularly over eastern Pennsylvania, New York and New England, where from 5 to 15 inches or even more disappeared, although this will probably be replaced to a considerable extent by that in prospect at this writing from a storm now moving from the lower Ohio Valley northeastward.

Some reductions in depth are also reported from Minnesota and North Dakota, and locally from Colorado, the Plateau region and far western mountains.

Material increases in depth were reported from the mountains of Arizona and over much of the Rocky Mountain system, and a small area from eastern Nebraska to southwestern Minnesota likewise had a considerable increase.

The snow-covered area was not greatly different from that reported a week ago, save that it receded somewhat northward in the lower Lake region and advanced southward into Nebraska and Iowa where a slight cover now exists.

ICE IN RIVERS AND HARBORS.

The general absence of material cold during the week favored the disappearance of considerable ice in practically all parts of the country where it existed a week ago. In the upper portions of the Missouri and Mississippi Rivers and their main tributaries there was considerable breaking up of the ice, and it was beginning to move out. Likewise in the Great Lakes, some of the harbors had become nearly free, particularly those of Lakes Huron and Erie and the straits around Detroit.

The ice harvest has closed in portions of New England, and it is probably nearing completion in other districts where the thickness has been sufficient to make such work practicable.

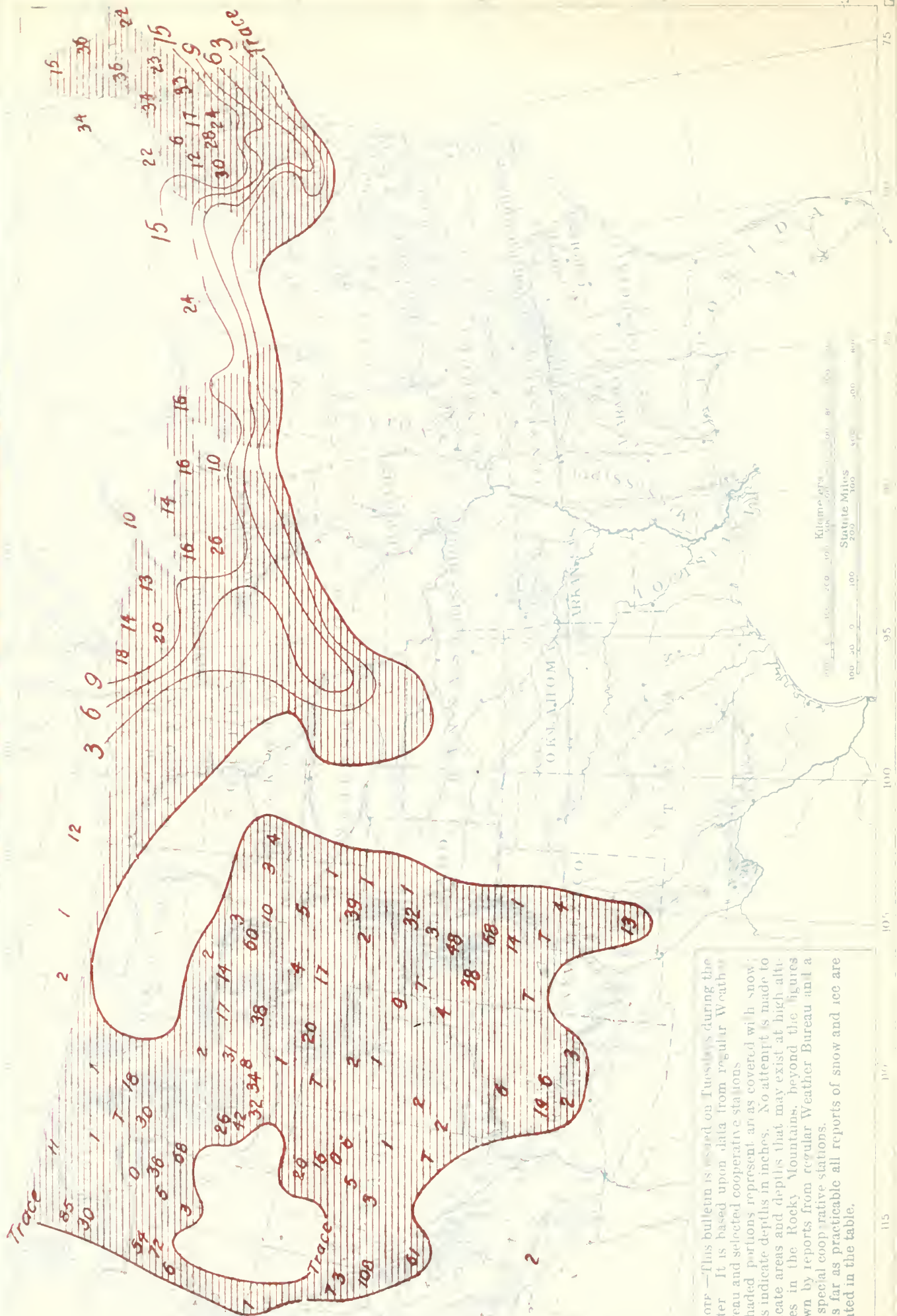
P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., MARCH 5, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>Arizona.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Nebraska.</i>	<i>Inches.</i>	<i>Inches.</i>
Flagstaff	6	.....	Omaha	3	*†
Grand Canyon	6	.....	Tekamah	6	.....
Pinedale	3	.....	<i>Nevada.</i>		
Williams	19	.....	Arthur	6	.....
<i>California.</i>			North Fork	16	.....
Huntington Lake ...	61	.....	<i>New Hampshire.</i>		
Portola	3	.....	Berlin	21	.....
Sierraville	7	.....	Concord	15	20.0
Summit	108	.....	Keene	17	.....
<i>Colorado.</i>			Pittsburg	34	.....
Cumbres	68	.....	<i>New Mexico.</i>		
Denver	1	.....	Chama	14	.....
Dillon	32	.....	Cloudero	13	.....
Rico	38	.....	Las Vegas	4	.....
<i>Connecticut.</i>			<i>New York.</i>		
Hartford	4	‡	Albany	2	10.0
New Haven	1	0.0	Beaver River	30	.....
<i>Idaho.</i>			Buffalo	0	13.5
Hailey	33	.....	Canton	6	.....
Idaho City	26	.....	De Ruyter	18	.....
Ketchum	34	.....	Lowville	13	.....
Mackay	8	.....	Ogdensburg	15	.....
North Star Mine	22	.....	Oswego	10	20.0
Soldier Creek	32	.....	Rochester	2	0.0
Spencer	31	.....	Rome	6	.....
<i>Iowa.</i>			Warwick	9	.....
Charles City	4	.....	<i>North Dakota.</i>		
Davenport	0	*†	Bismarck	T.	26.0
Des Moines	0	†	Devils Lake	2	.....
Dubuque	0	18.0	<i>Ohio.</i>		
Forest City	6	.....	Cleveland	0	†
New Hampton	3	.....	Toledo	0	*
Pocahontas	8	.....	<i>Oregon.</i>		
Sioux City	8	12.5	Government Camp ..	72	.....
<i>Maine.</i>			Sled Springs	36	.....
Cornish	33	.....	Welches	10	.....
Eastport	22	0.0	<i>Pennsylvania.</i>		
Gardiner	23	20.0	Erie	0	6.0
Greenville	36	26.5	Harrisburg	0	†
Houlton	36	.....	Seranton	1	.....
Portland	26	0.0	Williamsport	3	.....
Van Buren	15	.....	<i>South Dakota.</i>		
<i>Massachusetts.</i>			Huron	0	11.0
Amherst	6	.....	Pierre	T.	‡
Boston	1	0.0	Rapid City	4	.....
Concord	10	.....	<i>Utah.</i>		
Holyoke	15	.....	Moab	4	.....
<i>Michigan.</i>			Modena	2	.....
Alpena	4	*	Salt Lake City	2	.....
Cadillac	10	.....	Watson	9	.....
Escanaba	10	25.0	<i>Vermont.</i>		
Harrisville	8	.....	Brattleboro	17	19.0
Houghton	14	19.5	Burlington	6	14.0
Ludington	T.	.....	Northfield	17	.....
Mancelona	19	.....	<i>Washington.</i>		
Marquette	11	15.0	Spokane	1	.....
Port Huron	T.	†	<i>Wisconsin.</i>		
Saginaw	T.	12.0	Ashland	16	.....
Sault Ste. Marie	16	20.0	Green Bay	4	14.0
<i>Minnesota.</i>			La Crosse	8	‡
Duluth	4	19.5	Park Falls	26	.....
Fort Ripley	3	.....	Wausau	9	12.0
International Falls ..	14	.....	<i>Wyoming.</i>		
Leech Lake Dam	20	.....	Alta	38	.....
Roseau	18	.....	Buffalo	10	.....
St. Paul	2	*	Foxpark	39	.....
<i>Montana.</i>			Lander	4	.....
Billings	2	.....	Sheridan	3	.....
Haugan	18	.....	South Pass City	17	.....
Red Lodge	14	.....	Yellowstone Park ...	17	.....

*Shore ice. †Floating ice. ‡Ice gorged. §Measurement impracticable.
T. indicates trace.

Depth of Snow on Ground, 8 p. m., March 5, 1923.



Note.—This bulletin is issued on Tuesdays during the winter. It is based upon data from regular Weather Bureau and selected cooperative stations.

Shaded portions represent areas covered with snow. Lines indicate depths in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond the figures shown by reports from regular Weather Bureau and a few special cooperative stations.

As far as practicable all reports of snow and ice are printed in the table.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

No. 11.

WASHINGTON, D. C., MARCH 13, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

The storm prevailing at the close of the preceding week over the Ohio Valley moved to the New England coast by Wednesday morning, attended by high winds along the north Atlantic coast, local heavy rains in the Gulf States and Ohio Valley, and heavy rains and snows over the Northeastern States, the snows extending westward over the Great Lakes, though here they were mainly light.

The middle portion of the week was free from adverse weather, but little precipitation occurred, and the temperatures were mainly moderate, save about Friday when temperatures 10° to 20° or more below zero were reported from the northern portions of New York and New England. During the latter part of the week rainy weather set in over the Southwest, and moving northeastward reached the vicinity of southern Lake Michigan by Monday morning as a storm of wide extent and great severity, precipitation, mostly rain having occurred by that time over the greater part of the country from the Rocky Mountains eastward. This storm moved slowly thereafter into the Lake Huron district and had lost considerable energy by the close of the week. In the far West the week was mainly free from adverse weather conditions and precipitation, either rain or snow, was light and local.

DEPTH OF SNOW.

While there must have been considerable melting during the week over the snow-covered area, particularly from the Great Lakes eastward, the generally heavy falls during the early part of the week and that at the end evidently more than counterbalanced the loss, and the accumulated depths over the Great Lakes and from central New York northeastward over New England are now up to 10 or even 15 inches greater than were reported a week ago. In the western Mountain districts no large areas had material increases in the snow depths, although locally in the mountains of Oregon and Washington there were increases up to nearly 3 feet. In the main, however, the snow depth decreased by moderate amounts, particularly over the southern districts.

ICE IN RIVERS AND HARBORS.

At a few points in the upper Lake region and in northern New England there were slight increases in the ice thickness as compared with the preceding week. In all other districts where ice was reported a week ago there were general decreases in the thickness, and in many instances it disappeared altogether. The greater part of the ice appears to have moved out of the Mississippi, and it continues to break up in the Missouri, but little appearing to the southward of Bismarck, N. Dak. The rivers of New England remain closed, with but little change during the week, and similar conditions exist on the Hudson and its tributaries. Further south, however, the ice is moving out where it had previously accumulated.

The following statement, from the official in charge at Detroit, indicates the present ice conditions on the Great Lakes.

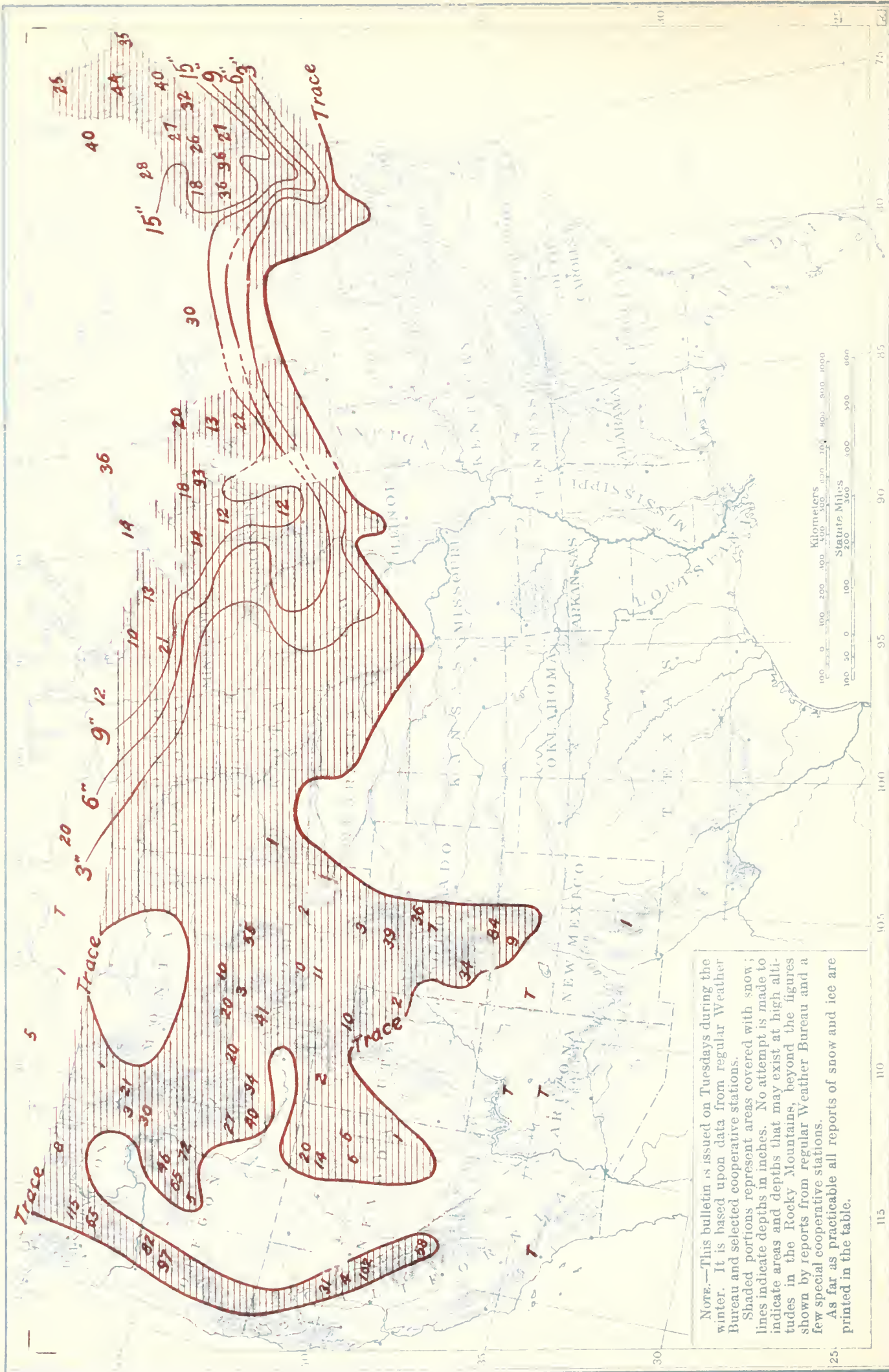
Superior extensive fields off Keweenaw Point and extreme east portion; St. Mary's River and Green Bay ice solid; Michigan west shore no ice; extensive fields along east shore and solid at Straits; Huron broken fields over northern portion, open water south portion along west shore, and extensive fields along east shore; Erie extensive fields from Ashtabula east to Buffalo; Ontario large fields over east portion.

P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., MARCH 12, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>California.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>New Hampshire.</i>	<i>Inches.</i>	<i>Inches.</i>
Huntington Lake ...	58	.....	Berlin	20	.....
Inskip	31	.....	Concord	17	19.0
Sierraville	4	.....	Pittsburg	39	.....
Summit	102	.....	<i>New Mexico.</i>		
<i>Colorado.</i>			Chama	9	.....
Cumbres	84	.....	Clouderoft	1	.....
Dillon	36	.....	<i>New York.</i>		
Leadville	7	.....	Albany	2	8.0
Rico	34	.....	Beaver River	36	.....
Steamboat Springs ..	39	.....	Buffalo	0	13.0
<i>Connecticut.</i>			Canton	9	.....
Hartford	4	2	Herkimer	15	.....
New Haven	2	0.0	Oswego	11	17.0
West Cornwall	24	.....	Plattsburg	10	.....
<i>Idaho.</i>			Poughkeepsie	4	.....
Hailey	32	.....	Rome	10	.....
Ketchum	34	.....	Saranac Lake	18	.....
Mackay	6	.....	Warwick	7	.....
Soldier Creek	33	.....	<i>North Dakota.</i>		
Spencer	30	.....	Bismarck	T.	25.0
<i>Illinois.</i>			Devils Lake	6	.....
Peoria	2	0.0	Ellendale	1	.....
Walnut	4	.....	<i>Oregon.</i>		
<i>Iowa.</i>			Government Camp ..	97	.....
Des Moines	1	0.0	Hilgard	1	.....
<i>Maine.</i>			Imperial Mine	65	.....
Cornish	32	.....	Prairie City	5	.....
Eastport	35	0.0	Sled Springs	46	.....
Gardiner	40	18.0	Welches	7	.....
Greenville	44	26.5	<i>Pennsylvania.</i>		
Millinocket	42	.....	Freeland	13	.....
Portland	34	0.0	Scranton	2	.....
Van Buren	25	.....	Williamsport	1	.....
<i>Massachusetts.</i>			<i>Rhode Island.</i>		
Amherst	5	.....	Block Island	2	0.0
Boston	3	0.0	Kingston	3	.....
Williamstown	12	.....	Providence	2	0.0
<i>Michigan.</i>			<i>South Dakota.</i>		
Cadillac	17	.....	Huron	T.	7.0
Escanaba	10	25.0	Rapid City	1	.....
Grand Haven	3	.....	<i>Utah.</i>		
Grand Rapids	2	.....	Kelton	2	.....
Grayling	22	.....	Watson	2	.....
Houghton	15	18.5	<i>Vermont.</i>		
Ironwood	14	.....	Brattleboro	22	17.0
Ludington	8	.....	Burlington	11	15.0
Mackinaw	13	.....	Northfield	26	.....
Marquette	18	18.5	St. Johnsbury	27	.....
Menominee	7	.....	<i>Washington.</i>		
Newberry	19	.....	Cascade Tunnel	115	.....
Saginaw	2	11.5	Stampede	65	.....
Sault Ste. Marie	20	22.0	<i>Wisconsin.</i>		
<i>Minnesota.</i>			Ashland	16	.....
Duluth	3	21.5	Brodhead	8	.....
Ely	13	.....	Fond du Lac	12	.....
Grand Meadow	8	.....	Green Bay	8	10.0
International Falls ..	10	.....	Medford	5	.....
Leech Lake Dam	21	.....	Milwaukee	12	0.0
Minneapolis	T.	*	Rhineland	12	.....
St. Paul	T.	*	Wausau	4	10.0
<i>Missouri.</i>			<i>Wyoming.</i>		
St. Joseph	2	†	Alta	41	.....
<i>Montana.</i>			Cody	3	.....
Haugan	21	.....	Evanston	10	.....
Red Lodge	10	.....	South Pass City	11	.....
<i>Nevada.</i>			Yellowstone Park ..	20	.....
Arthur	5	.....		
Gold Creek	20	.....		
North Fork	14	.....		

*Shore ice. †Floating ice. ‡Ice gorged. §Measurement impracticable.
T. indicates trace.



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As far as practicable all reports of snow and ice are printed in the table.

SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CHARLES F. MARVIN, Chief.



No. 12.

WASHINGTON, D. C., MARCH 20, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

The week just closed exhibited the changing character of March weather at its worst, the entire week showing unusually marked and rapid variations in temperature, frequent precipitation, heavy at times, and ending with a cold wave of marked severity over nearly all districts from the Rocky Mountains eastward.

The cold was unusually severe for March, many sections reporting the lowest temperatures of record for so late in the month. At the 8 a. m. observations of Monday, the line of zero temperatures had reached northern Missouri and central Illinois, and freezing weather had extended to the middle Texas coast. During Monday night freezing weather extended eastward over the Gulf and South Atlantic States, reaching the coast lines of these districts, except the Peninsula of Florida.

DEPTH OF SNOW.

As shown by the chart on the reverse side, compared with that of the preceding week, there has been no great change during the week in the area having an appreciable snow cover. A small area extending from northern Missouri northeastward to the western portions of New York and Pennsylvania, which was bare a week ago, now has a slight cover in places, and in the western mountain districts the snow-covered area at moderate elevations has been somewhat reduced.

The week brought a considerable increase in depth from central Nebraska to the Great Lakes, the falls being particularly heavy in eastern Nebraska, Iowa, northern Illinois, and southern Wisconsin, where high winds caused much drifting and interference with transportation. There was some increase in the snow depth over the southern and central Rocky Mountain districts, and locally in northern New England.

In general there was a marked reduction in the deep snow that has covered the greater part of New York and the whole of New England during the entire winter, the decrease in depth ranging up to a foot or more in some sections. In the far western mountains the depths are generally less than were reported last week, the result mainly of settling.

The outlook for water in the districts depending on the accumulated snowfall in the high mountains continues good, in the main. The snow, having occurred mostly in the earlier part of the winter, is now well packed and contains a large percentage of water.

ICE IN RIVERS AND HARBORS.

On account of the severe cold during the latter part of the week, some additional ice formed over the more northern districts. In the main, however, there were no marked changes in the ice conditions prevailing a week ago. The ice in the main rivers is apparently passing out without serious gorging, and in the lower Lakes the harbors are largely open, but those of Lake Superior and around the straits of northern Michigan continue heavily ice-bound.

The following report from the official in charge, at Detroit, indicates the ice condition on the Great Lakes in considerable detail:

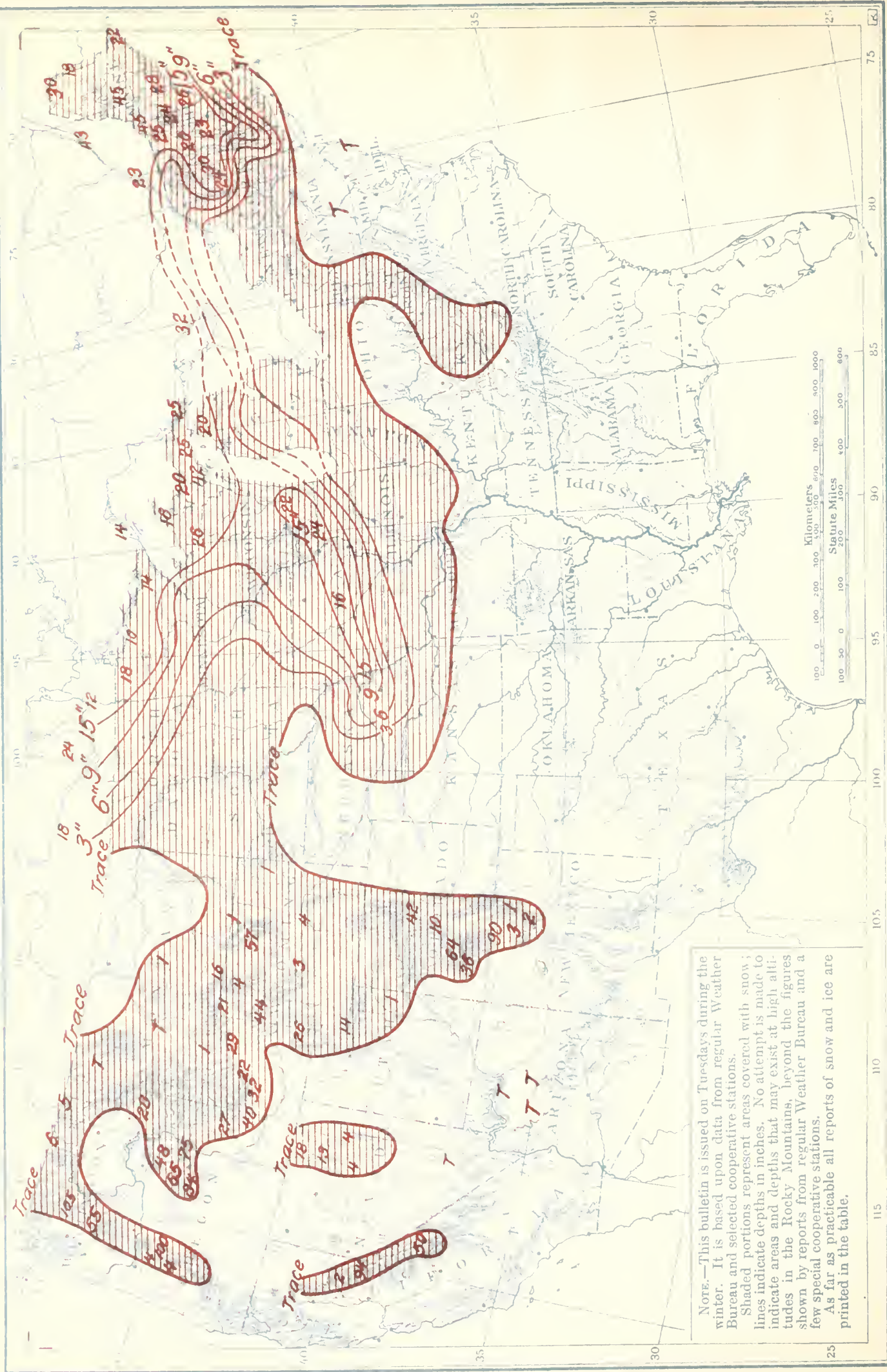
Extensive fields exist in Lake Superior, with some open water showing at the extreme eastern end. No change in St. Marys River, and the ice in Green Bay remains solid. Some ice along the west shore of Lake Michigan, but fields not so large on east shore. The straits remain solid and in Huron the fields are over north portion and along the east shore. Ice is running out of Lake St. Clair. In Lake Erie the fields are confined to the east portion and breaking up, while in Ontario broken fields exist in the east end.

P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., MARCH 19, 1923.

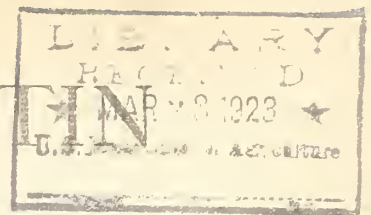
Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>California.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Minnesota.</i>	<i>Inches.</i>	<i>Inches.</i>
Huntington Lake ...	50	.....	Duluth.....	5	20.0
Summit.....	94	.....	Leech Lake Dam.....	22	.....
<i>Colorado.</i>			Roseau.....	18	.....
Cumbres.....	90	.....	St. Paul.....	2	?
Dillon.....	42	.....	<i>Missouri.</i>		
Leadville.....	10	.....	Hannibal.....	T.	†
Rico.....	36	.....	Kansas City.....	T.	†
<i>Connecticut.</i>			Unionville.....	1	.....
Hartford.....	T.	?	<i>Montana.</i>		
West Cornwall.....	14	.....	Lewistown.....	1	.....
<i>Idaho.</i>			Red Lodge.....	16	.....
Hailey.....	29	.....	<i>Nebraska.</i>		
Ketchum.....	32	.....	Auburn.....	4	.....
Mackay.....	5	.....	Lincoln.....	8	.....
North Star Mine.....	22	.....	Omaha.....	15	*
Porthill.....	5	.....	<i>Nevada.</i>		
Soldier Creek.....	32	.....	Arthur.....	4	.....
Spencer.....	29	.....	North Fork.....	13	.....
<i>Illinois.</i>			<i>New Hampshire.</i>		
Chicago.....	1	.....	Concord.....	11	15.0
Peoria.....	T.	0.0	<i>New Jersey.</i>		
Pontiac.....	1	.....	Atlantic City.....	T.	.....
Walnut.....	10	.....	<i>New York.</i>		
<i>Indiana.</i>			Albany.....	1	†
Indianapolis.....	T.	.....	Beaver River.....	24	.....
Royal Center.....	T.	.....	Buffalo.....	T.	12.0
Vincennes.....	T.	.....	Rome.....	3	.....
<i>Iowa.</i>			Saranac Lake.....	12	.....
Albia.....	4	.....	Saratoga Springs.....	18	.....
Atlantic.....	9	.....	<i>North Carolina.</i>		
Charles City.....	8	.....	Asheville.....	T.	.....
Davenport.....	11	0.0	<i>North Dakota.</i>		
Des Moines.....	13	3.5	Bismarck.....	T.	25.0
Dubuque.....	9	0.0	Devils Lake.....	8	.....
Fstherville.....	4	.....	Williston.....	T.	?
Keokuk.....	T.	*	<i>Ohio.</i>		
New Hampton.....	12	.....	Cincinnati.....	T.	0.0
Pocahontas.....	8	.....	Cleveland.....	T.	0.0
Sioux City.....	1	3.0	<i>Oregon.</i>		
Waterloo.....	13	.....	Government Camp.....	100	.....
<i>Kansas.</i>			Imperial Mine.....	65	.....
Concordia.....	1	.....	Sled Springs.....	48	.....
Smith Center.....	2	.....	<i>Pennsylvania.</i>		
<i>Kentucky.</i>			Erie.....	T.	0.5
Eubank.....	T.	.....	Harrisburg.....	T.	0.0
Mount Sterling.....	T.	.....	<i>South Dakota.</i>		
Williamsburg.....	T.	.....	Huron.....	T.	8.0
<i>Maine.</i>			Pierre.....	T.	†
Eastport.....	22	0.0	Yankton.....	0	1.0
Gardiner.....	28	15.0	<i>Vermont.</i>		
Greenville.....	45	26.5	Brattleboro.....	15	17.0
Portland.....	26	0.0	Burlington.....	5	17.0
Van Buren.....	30	.....	Northfield.....	20	.....
<i>Maryland.</i>			St. Johnsbury.....	20	.....
Oakland.....	1	.....	<i>Washington.</i>		
<i>Massachusetts.</i>			Cascade Tunnel.....	105	.....
Amherst.....	7	.....	Laurier.....	6	.....
Holyoke.....	10	.....	<i>Wisconsin.</i>		
Williamstown.....	4	.....	Fond du Lac.....	22	.....
<i>Michigan.</i>			Green Bay.....	11	10.0
Alpena.....	8	*	La Crosse.....	7	8.0
Detroit.....	T.	†	Madison.....	15	.....
Escanaba.....	12	25.5	Milwaukee.....	17	0.0
Houghton.....	18	19.0	Wausau.....	6	12.0
Ludington.....	10	.....	<i>Wyoming.</i>		
Mackinaw.....	20	.....	Alta.....	44	.....
Marquette.....	20	19.0	Casper.....	4	.....
Menominee.....	18	.....	Evanston.....	14	.....
Newberry.....	25	.....	Lander.....	3	.....
Sault Ste. Marie.....	25	22.0	Yellowstone Park.....	21	.....

*Shore ice. †Floating ice. ‡Ice gorged. §Measurement impracticable.
T. indicates trace.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.



No. 13.

WASHINGTON, D. C., MARCH 27, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

The severe cold wave existing during the latter part of the preceding week still persisted over the southeastern districts at the beginning of the week just closed, freezing temperatures being reported on the morning of the 20th to the south Atlantic coast line as far as southern Georgia, and some of the lowest temperatures ever reported so late in March occurred at a number of points in that region. Much warmer weather quickly followed, however, and the remainder of the week had more moderate temperature, although the early part of the week was distinctly cold in the Plateau and Rocky Mountain districts, and a sharp fall in temperature over-spread the more eastern districts on Saturday, and the latter part of the week was moderately cold over the Great Lakes and thence eastward.

Precipitation for the week was mainly light and scattered, except for some heavy snows near the beginning over portions of Colorado and Wyoming, and about the middle of the week, when rather general rains or snows prevailed from the Mississippi Valley eastward, some heavy rains occurring during this period at points in the drainage basins of the Ohio and Lower Mississippi Valleys. Only small amounts of precipitation were reported from the districts to the westward of the Rocky Mountains.

DEPTH OF SNOW.

In the absence of material snowfall during the week, save in a few localities, the snow depths decreased in practically all parts of the country. In New England and eastern New York the loss ranged up to a foot or more, and in the lower Missouri and upper Mississippi Valleys the heavy snow near the close of the preceding week very generally disappeared, save where heavily drifted.

In the western mountains decreases were almost universal, ranging up to a foot or more at some of the high elevations. This was largely the result of settling, as moderately cool weather prevented any rapid run-off.

The snow-covered area diminished to a material extent during the week, particularly in the lower Missouri and upper Mississippi Valleys where mostly bare ground now prevails in districts heavily covered a week ago.

ICE IN RIVERS AND HARBORS.

Due to moderate cold over the more northern portions of the Great Lakes, some additional ice formed on the harbors of Lake Superior and portions of Lake Huron, otherwise there was a general decrease, and the breaking up and moving out processes progressed in all the main streams where ice still remains. Some gorging occurred at points in the Missouri River, but in other rivers the break-up has proceeded more slowly and the ice is apparently moving out without serious damage.

The following report from the official in charge at Detroit indicates in more detail the present condition of the ice on the Great Lakes:

Cold weather stiffened the ice on Lake Superior, and extensive fields exist from Duluth to Whitefish Point. No change occurred in St. Marys River, and Green Bay remains solid. Lake Michigan has no fields along west shore, but fields exist along east shore. No change at the Straits, and extensive fields cover northern Lake Huron. Lake Erie fields are confined to the extreme east portion, and the Ontario fields are likewise confined to extreme east portion. Harbors are opening.

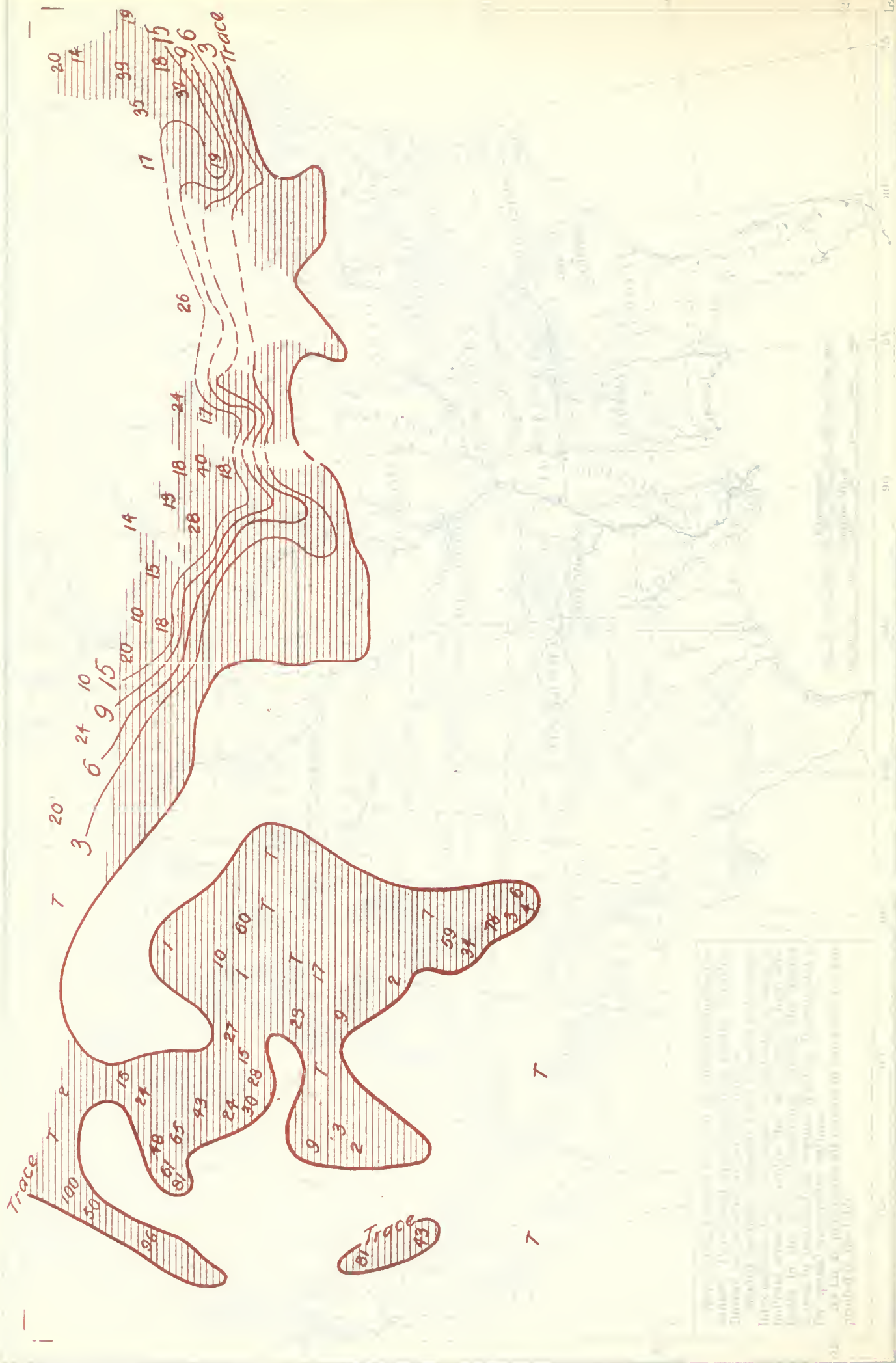
P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS. 8 P. M., MARCH 26, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>California.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>New Mexico—Contd.</i>	<i>Inches.</i>	<i>Inches.</i>
Huntington Lake ...	43	.....	Truchas.....	4	.....
Mount Wilson	T.	.....	<i>New York.</i>		
Summit.....	81	.....	Albany.....	T.	†
<i>Colorado.</i>			Beaver River.....	19	.....
Cumbres.....	78	.....	Buffalo.....	1	8.0
Leadville.....	7	.....	Canton.....	3	.....
Rico.....	34	.....	Corinth.....	25	.....
<i>Connecticut.</i>			De Ruyter.....	4	.....
Hartford.....	0	†	Fredonia.....	2	.....
<i>Idaho.</i>			Herkimer.....	6	.....
Hailey.....	22	.....	Lowville.....	12	.....
Idaho City.....	24	.....	Malone.....	3	.....
Ketchum.....	28	.....	Ogdensburg.....	10	.....
McCall.....	43	.....	Oswego.....	2	0.0
North Star Mine.....	15	.....	Plattsburg.....	10	.....
Porthill.....	2	.....	Rochester.....	2	0.0
Soldier Creek.....	29	.....	Rome.....	3	.....
Spencer.....	27	.....	Saranac Lake.....	12	.....
<i>Iowa.</i>			Saratoga Springs.....	12	.....
Des Moines.....	T.	†	Syracuse.....	T.	.....
Dubuque.....	3	*†	Watertown.....	4	.....
Iowa City.....	2	.....	<i>North Dakota.</i>		
Iowa Falls.....	4	.....	Bismarck.....	T.	24.0
Sioux City.....	0	†	Devils Lake.....	3	.....
Waterloo.....	2	.....	Williston.....	T.	17.5
<i>Maine.</i>			<i>Ohio.</i>		
Cornish.....	32	.....	Cleveland.....	T.	0.0
Eastport.....	19	0.0	Sandusky.....	T.	0.0
Greenville.....	39	26.5	Tiffin.....	1	.....
Portland.....	15	0.0	<i>Oregon.</i>		
Van Buren.....	20	.....	Government Camp..	96	.....
<i>Michigan.</i>			Imperial Mine.....	61	.....
Alpena.....	4	1.5	Sled Springs.....	48	.....
Big Rapids.....	2	.....	<i>Pennsylvania.</i>		
Cadillac.....	25	.....	Emporium.....	T.	.....
Detroit.....	0	†	Erie.....	0	*
Escanaba.....	12	25.0	Towanda.....	T.	.....
Houghton.....	13	19.5	<i>South Dakota.</i>		
Ludington.....	2	.....	Huron.....	0	5.0
Mackinaw.....	17	.....	Yankton.....	0	†
Marquette.....	18	20.0	<i>Utah.</i>		
Port Huron.....	T.	1.0	Kelton.....	T.	.....
Sault Ste. Marie.....	24	22.0	Watson.....	2	.....
<i>Minnesota.</i>			<i>Vermont.</i>		
Duluth.....	6	21.0	Bellows Falls.....	10	.....
Ely.....	15	.....	Brattleboro.....	8	*†
Fort Ripley.....	2	.....	Burlington.....	4	?
International Falls ..	10	.....	Northfield.....	12	.....
Leech Lake Dam.....	18	.....	St. Johnsbury.....	11	.....
Roseau.....	20	.....	<i>Washington.</i>		
St. Paul.....	T.	*†	Cascade Tunnel.....	100	.....
<i>Montana.</i>			Laurier.....	T.	.....
Haugan.....	15	.....	Stampede.....	50	.....
Lewistown.....	1	.....	<i>Wisconsin.</i>		
Red Lodge.....	10	.....	Brodhead.....	6	.....
<i>Nebraska.</i>			Fond du Lac.....	8	.....
Omaha.....	T.	†	Green Bay.....	11	8.0
<i>Nevada.</i>			La Crosse.....	0	8.0
Arthur.....	3	.....	Madison.....	6	.....
Hylton.....	2	.....	Medford.....	8	.....
North Fork.....	9	.....	Milwaukee.....	2	0.0
<i>New Hampshire.</i>			Park Falls.....	29	.....
Berlin.....	7	.....	Rhineland.....	8	.....
Concord.....	5	14.0	Wausau.....	3	10.5
Hanover.....	15	.....	<i>Wyoming.</i>		
Keene.....	6	.....	Cheyenne.....	T.	.....
Pittsburg.....	35	.....	Cody.....	1	.....
<i>New Mexico.</i>			Dome Lake.....	60	.....
Elizabethtown.....	6	.....	Evanston.....	9	.....
Tres Piedras.....	3	.....	South Pass City.....	17	.....

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable.
T. indicates trace.

Depth of Snow on Ground, 8 p. m., March 26, 1923.



SNOW AND ICE BULLETIN

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CHARLES F. MARVIN, Chief.

No. 14.

WASHINGTON, D. C., APRIL 3, 1923.

WINTER 1922-23.

GENERAL SUMMARY OF THE WEATHER DURING THE WEEK.

High atmospheric pressure dominated the weather very generally during the week just closed, and low temperature resulted in nearly all districts.

During the first few days of the week an anticyclone, moving rapidly from the Canadian Northwest to the Atlantic coast, gave unusually low temperatures over many eastern districts. This was immediately followed by a more extensive one, which quickly overspread the far northwestern districts and moving eastward brought severe cold to the greater part of the country. Freezing temperature extended into the central portions of the Gulf States, and over practically all districts, from the middle and upper Mississippi Valleys eastward to the Atlantic coast, lower temperatures than ever before observed at this season were reported as the cold wave advanced eastward.

On account of the marked anticyclone conditions existing during the week, precipitation was confined mainly to the outer portions of the country, mostly over the Gulf and South Atlantic States, and along the northern border from the Great Lakes eastward during the early part of the week and over the far West about the end.

DEPTH OF SNOW.

Due to continued cold no great reduction occurred in the snow depths over those reported a week ago, save in the mountain districts of the west where the decreases ranged up to 12 and 15 inches and in a few cases more. No material snow occurred during the week, save over the upper Michigan district where a few stations reported considerable falls, and over extreme eastern Maine where falls up to 5 inches occurred in a few localities.

The snow-covered area remains substantially as reported a week ago, except that a considerable area in Iowa, and vicinity with a slight covering then, is now mostly bare. Likewise more of the moderate elevations in the western mountains are uncovered.

The heavy covering that has existed during the greater part of the winter over the Northeastern States is disappearing slowly, largely due to the hardened condition of the snow which has remained on the ground so long, and unless subjected to most unusual conditions promises to melt slowly.

ICE IN RIVERS AND HARBORS.

The severe cold existing during much of the week caused some increase of ice on most of the Great Lakes and prevented any material change in the ice conditions on the rivers of New England or the upper portions of the Hudson and its northern tributaries. Of the remaining principal river systems only on portions of the upper Missouri is the ice still unbroken, and at the present there are no indications of gorges seriously impeding the passing out of the ice.

The following report from the official at Detroit indicates in more detail the condition of the ice on the Great Lakes:

Extensive fields continue over Lake Superior, but there was not much movement. Whitefish Bay, St. Marys River, and Green Bay remain solid. Lake Michigan has some drifting fields over south portion and extensive fields in north portion. The straits remain solid. Lake Huron has extensive fields over north and south portions. Lake Erie has a few fields in the west and extensive fields in the east portions, and similar conditions exist on Lake Ontario. Cold weather during the week stiffened the ice on all lakes.

This issue closes the present season of the Snow and Ice Bulletin, but the conditions of the ice in the Great Lakes will appear for several succeeding weeks in a bulletin issued at the Weather Bureau Office in Detroit, Mich., copies of which may be obtained by request upon that office.

P. C. DAY,
Meteorologist, in charge of Division.

SNOW DEPTH AND ICE THICKNESS, 8 P. M., APRIL 2, 1923.

Stations.	Snow.	Ice in rivers, harbors, etc.	Stations.	Snow.	Ice in rivers, harbors, etc.
<i>Colorado.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>New Hampshire—Contd.</i>	<i>Inches.</i>	<i>Inches.</i>
Crested Butte	44	.....	Pittsburg	35	.....
Cumbres	43	.....	West Stewartstown ..	20	.....
Rico	22	.....	<i>New Mexico.</i>		
Steamboat Springs...	38	.....	Elizabethtown	1	.....
<i>Idaho.</i>			<i>New York.</i>		
Hailey	10	.....	Albany	T.	0.0
Ketchum	14	.....	Beaver River	20	.....
Montpelier	10	.....	Buffalo	0	9.5
North Star Mine.....	1	.....	Canton	1	.....
Soldier Creek	17	.....	Corinth	24	.....
<i>Iowa.</i>			De Ruyter	5	.....
Dubuque	T.	*	Herkimer	3	.....
Iowa Falls	T.	.....	Lowville	12	.....
Marshalltown	T.	.....	Malone	1	.....
Pocahontas	T.	.....	Ogdensburg	4	.....
Sioux City	0	†	Oswego	0	4.0
<i>Maine.</i>			Plattsburg	8	.....
Cornish	24	.....	Rochester	T.	0.0
Eastport	24	0.0	Rome	3	.....
Gardiner	13	10.0	Saranac Lake	15	.....
Portland	12	0.0	Syracuse	T.	.....
Presque Isle	17	.....	Watertown	2	.....
Van Buren	20	.....	<i>North Dakota.</i>		
<i>Massachusetts.</i>			Bismarck	0	13.5
Concord	T.	.....	Williston	0	‡
Williamstown	3	.....	<i>Oregon.</i>		
<i>Michigan.</i>			Baker Mine	48	.....
Alpena	2	4.0	Government Camp ..	80	.....
Big Rapids	1	.....	Larch Mountain	69	.....
Cadillac	23	.....	Sled Springs	36	.....
Escanaba	22	27.5	<i>South Dakota.</i>		
Harrisville	6	.....	Rapid City	T.	.....
Ludington	1	.....	<i>Vermont.</i>		
Mackinaw	20	.....	Brattleboro	0	*
Marquette	18	20.0	Burlington	4	16.0
Port Huron	0	4.0	Northfield	9	.....
Sault Ste. Marie....	30	22.0	St. Johnsbury	8	.....
<i>Minnesota.</i>			White River Junct'n.	5	.....
Duluth	4	25.0	<i>Wisconsin.</i>		
Ely	28	.....	Green Bay	4	8.0
Grand Meadow	T.	.....	La Crosse	0	‡
Minneapolis	1	.....	Madison	T.	.....
Moorhead	T.	.....	Medford	6	.....
Roseau	20	.....	Milwaukee	T.	0.0
St. Paul	T.	*	Park Falls	28	.....
<i>Montana.</i>			Rhineland	11	.....
Havre	T.	.....	Wausau	2	6.0
Helena	1	.....	Williams Bay	3	.....
Miles City	T.	.....	<i>Wyoming.</i>		
Red Lodge	5	.....	Alta	36	.....
<i>Nevada.</i>			Buffalo	2	.....
Arthur	1	.....	Cheyenne	T.	.....
Gold Creek	10	.....	Dome Lake	54	.....
Hylton	1	.....	Sheridan	2	.....
North Fork	2	.....	South Pass City	12	.....
Reno	T.	.....	Yellowstone Park ...	10	.....
Tonopah	T.	.....		
<i>New Hampshire.</i>					
Berlin	6	.....		
Concord	T.	12.0			

* Shore ice. † Floating ice. ‡ Ice gorged. § Measurement impracticable.
T. indicates trace.

NOTE.—This bulletin is issued on Tuesdays during the winter. It is based upon data from regular Weather Bureau and selected cooperative stations.

Shaded portions represent areas covered with snow; lines indicate depths in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond the figures shown by reports from regular Weather Bureau and a few special cooperative stations.

As far as practicable all reports of snow and ice are printed in the table.

Shaded portions represent areas covered with snow; lines indicate depths in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond the figures shown by reports from regular Weather Bureau and a few special cooperative stations.

As far as practicable all reports of snow and ice are printed in the table.